

DHCD FISH
#097147

PROJECT MANUAL
MODERNIZATION OF STATE AIDED PUBLIC HOUSING

**200-1 Select HTG/DHW System
Replacement and Heat Pump Pilot Study
at 2 Units, #097147**

STATE-AIDED DEVELOPMENT:

Green Acres Village (200-1)
Normandy Road, Fitchburg, MA 01420
Fitchburg, MASSACHUSETTS

Massachusetts Department of
Housing and Community Development



Fitchburg Housing Authority

50 Day Street
Fitchburg, Massachusetts 01420
Phone: 978-342-5222
Fax: 978-343-4148

BOARD

Executive Director: Douglas M. Bushman
Chair: Linda Byrne
Vice Chair: Mary Giannetti
Treasurer: David Rousseau
Assistant Treasurer: David Basillio
Member: Adam Goodwin

Prime Designer:

C.A. Crowley Engineering
645 County Street, Unit 6
Taunton, MA 02780
Phone: (508) 884-5094

DATE: 16 Apr 2021

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Section 00.01.05
LIST OF CONSULTANTS

**200-1 Select HTG/DHW System Replacement and Heat Pump Pilot Study at 2
Units, #097147
DHCD FISH #097147**

Fitchburg Housing Authority
Fitchburg, Massachusetts

PRIME DESIGNER

C.A. Crowley Engineering
645 County Street, Unit 6
Taunton, MA 02780
Phone: (508) 884-5094

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Section 00.11.00
ADVERTISEMENT TO BID

The **Fitchburg Housing Authority**, the Awarding Authority, invites sealed bids from Contractors for the **200-1 Select HTG/DHW System Replacement and Heat Pump Pilot Study at 2 Units, #097147** in Fitchburg, Massachusetts, in accordance with the documents prepared by **C.A. Crowley Engineering**.

The Project consists of: Replacement of the existing combination boiler/water heater units with new gas fired furnace with electric water heater in 8 units. Add Alternate to install New pilot heat pump replacement with gas fired water heater in 2 units.

The work is estimated to cost **\$170,000**.

Bids are subject to M.G.L. c.149 §44A-J & to minimum wage rates as required by M.G.L. c.149 §§26 to 27H inclusive.

THIS PROJECT IS BEING ELECTRONICALLY BID AND HARD COPY BIDS WILL NOT BE ACCEPTED. Please review the instructions in the bid documents on how to register as an electronic bidder. The bids are to be prepared and submitted at www.biddocsonline.com . Tutorials and instructions on how to complete the electronic bid documents are available online (click on the "Tutorial" tab at the bottom footer).

General bidders must be certified by the Division of Capital Asset Management and Maintenance (DCAMM) in the following category of work, **General Building Construction**, and must submit a current DCAMM Certificate of Eligibility and signed DCAMM Prime/General Contractor Update Statement.

General Bids will be received until on and publicly opened online, forthwith.

Filed Sub-bids for the trades listed below will be received until on and publicly opened online, forthwith.

Filed sub-bidders must be DCAMM certified for the trades listed below and bidders must include a current DCAMM Sub-Bidder Certificate of Eligibility and a signed DCAMM Sub Bidder's Update Statement.

SUBTRADES

Section 22 00 00 - Plumbing
Section 26 00 00 - Electrical Work

All Bids should be submitted online at www.biddocsonline.com and received no later than the date and time specified above.

ADVERTISEMENT TO BID

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General bids and sub-bids shall be accompanied by a bid deposit that is not less than five (5%) of the greatest possible bid amount (considering all alternates), and made payable to the **Fitchburg Housing Authority**.

Bid Forms and Contract Documents will be available for pick-up at www.biddocsonline.com (may be viewed electronically and hardcopy requested) or at Nashoba Blue, Inc. at 433 Main Street, Hudson, MA 01749 (978-568-1167).

There is a plan deposit of **\$50.00** per set (maximum of 2 sets) payable to BidDocs ONLINE Inc.

Plan deposits may be electronically paid or by check. This deposit will be refunded for up to two sets for general bidders and for one set for sub-bidders upon return of the sets in good condition within thirty (30) days of receipt of general bids. Otherwise the deposit shall be the property of the Awarding Authority. Additional sets may be purchased for **\$50.00**

Bidders requesting Contract Documents to be mailed to them shall include a separate check for **\$40.00** per set for UPS Ground (or \$65.00 per set for UPS overnight), non-refundable, payable to the BidDocs ONLINE Inc., to cover mail handling costs.

General bidders must agree to contract with minority and women business enterprises as certified by the Supplier Diversity Office (SDO), formerly known as SOMWBA. The combined participation benchmark reserved for such enterprises shall not be less than 10.4% of the final contract price including accepted alternates. **Request for waivers must be sent to DHCD (David.McClave@mass.gov) 5 calendar days prior to the General Bid date if the work is estimated to cost less than \$500,000 OR 10 calendar days prior to the General Bid date if the work is estimated to cost \$500,000 or more – NO WAIVERS WILL BE GRANTED AFTER THE BID DATE. See *Contract Documents - Article 3 of the Instructions to Bidders*.**

PRE-BID CONFERENCE / SITE VISIT: NONE

SITE VISIT BY APPOINTMENT: NONE

The Contract Documents may be seen, but not removed at:
Fitchburg Housing Authority
50 Day Street
Fitchburg, MA 01420
978-342-5222

Nashoba Blue Inc.
433 Main Street
Hudson, MA 01749
978-568-1167

END OF SECTION

Section 00.21.00
INSTRUCTIONS TO BIDDERS
Projects \$150,000 - \$10,000,000

THIS PROJECT IS BEING ELECTRONICALLY BID AND HARD COPY BIDS WILL NOT BE ACCEPTED. Please review the instructions in the bid documents on how to register as an electronic bidder. The bids are to be prepared and submitted at www.biddocsonline.com . Tutorials and instructions on how to complete the electronic bid documents are available online (click on the "Tutorial" tab at the bottom footer).

ARTICLE 1 - BIDDER'S REPRESENTATION

- 1.1** Each General Bidder or Sub-bidder (hereinafter called the "**Bidder**") by making a bid or sub-bid (hereinafter called "**bid**") represents that:
- 1.** The Bidder has read and understands the Contract Documents and the bid is made in accordance therewith.
 - 2.** The Bidder has visited the site and is familiar with the local conditions under which the Work has to be performed.
- 1.2** Failure to so examine the Contract Documents and site will not relieve any Bidder from any obligation under the bid as submitted.

ARTICLE 2 - GENERAL BIDDER'S AND FILED SUB-BIDDER'S CERTIFICATION

- 2.1** General bids shall be submitted with the following:
- 1.** A Certificate of Eligibility on the appropriate form prescribed and issued by the Division of Capital Asset Management and Maintenance (DCAMM), showing that the Bidder is eligible to bid on projects of this size in the specified category of work; and
 - 2.** A Contractor Update Statement, DCAMM Form CQ3.
 - 3.** The Contractor Update Statement (CQ3) is not a public record as defined in DCAMM regulation 810 CMR 8.06 and will not be open to public inspection.
- 2.2** Advertised Filed sub-bids shall be submitted with the following:
- 1.** A Sub-Bidder Certificate of Eligibility on the appropriate form prescribed and issued by DCAMM showing that the sub-bidder is eligible to bid on public projects in the specified category of work; and
 - 2.** A Sub-Bidder Update Statement on a form prescribed by DCAMM.
- 2.3** It is the Sub-Bidder's responsibility to obtain the necessary forms from DCAMM and make application in sufficient time for evaluation of the application and issuance of a Sub-Bidder Certificate of Eligibility prior to bid.
- 2.4** The Sub-Bidder Update Statement is not a public record as defined in DCAMM regulation 810 CMR 8.06 and will not be open to public inspection.

- 2.5 All employees who work on this construction site must have no less than 10 hours of OSHA-approved safety and health training.
- 2.6 The Contractor and all subcontractors on this project will be required to provide certification of compliance with the requirement of 2.5 above in accordance with the provisions of these Contract Documents.
- 2.7 The Contractor and all subcontractors shall be completely responsible for compliance with EPA Lead Renovator Requirements including EPA regulation 40 CFR 745.

ARTICLE 3 – MBE/WBE PARTICIPATION BENCHMARKS

- 3.1 Refer to the Advertisement for applicability of Article 3.
- 3.2 The participation benchmarks that must be contracted with minority-owned and/or women- owned enterprises is stated in the Advertisement for Bid. If the Advertisement for Bid does not include participation benchmarks, paragraphs 3.3-3.6 below and Section 00.73.39 shall not apply.
- 3.3 The apparent low Bidder must submit the SDO Certified MBE/WBE Participation Schedule (Form 00.73.39.01) and Letters of Intent (Form 00.73.29.02) from all of the firms listed on the Schedule within five (5) working days after receipt of general bids. Letters of Intent are not required for filed Subcontractors. However, filed Sub-bidders who are SDO Certified shall be listed on the Participation Schedule.
- 3.4 If the general contractor requires any of the following it must do so in writing to the Department (David.McClave@mass.gov).
 - 3.4.1 within five (5) calendar days after receipt of general bids.
 - 1. a time extension for the submission of its Participation Schedule & Letter(s) of Intent.
 - 3.4.2 within **five (5)** calendar days **PRIOR** to the General Bid opening date and time for projects with an estimated construction cost less than \$500,000 **OR** within **ten (10)** calendar days **PRIOR** to the general bid opening date and time for projects with an estimated construction cost of \$500,000 or more:
 - 1. a reduction in the participation benchmarks stated in the Advertisement; or
 - 2. a waiver from the participation benchmark requirements.
 - 3.4.3 The submitted request will be processed in the following manner:
 - 1. **For Projects with an estimated construction cost less than \$500,000:** The Department will review the request for reduction or waiver. If the Department determines that compliance with participation benchmarks is not feasible it has the discretion to reduce or waive these benchmarks. If the benchmarks are reduced or waived, an addendum to the project, 48 hours prior to the bid opening will be issued with the new participation requirements. Such waiver shall be granted only upon the General Contractors showing that good faith efforts have been made to comply with the participation benchmarks. Waivers that are granted will be granted for all General Contractors bidding on the project.

INSTRUCTIONS TO BIDDERS

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2. For Projects with an estimated construction cost of \$500,000 or more: The Department will request a review of the request for reduction or waiver by the Supplier Diversity Office. If the Supplier Diversity Office determines that compliance with participation benchmarks is not feasible it has the discretion to reduce or waive these benchmarks. If the benchmarks are reduced or waived, an addendum to the project, 48 hours prior to the bid opening will be issued with the new participation requirements. Such waiver shall be granted only upon the General Contractors showing that good faith efforts have been made to comply with the participation benchmarks. Waivers that are granted will be granted for all General Contractors bidding on the project.

- 3.4.4** The completed Participation Schedule, Letters of Intent and, if necessary, requests for a reduction in participation benchmarks or a waiver from participation benchmarks may be sent electronically to: David.McClave@mass.gov. No hard copy is required.
- 3.5** The Bidder must submit with its contract submission executed subcontracts with all subcontractors or a purchase order or invoice from material suppliers or manufacturers listed on the Participation Schedule.
- 3.6** Filed Sub-bidders are not required to submit a Participation Schedule. They may, at their option, submit a Letter of Intent with their bid if they are a SDO certified enterprise.

ARTICLE 4 - REQUESTS FOR INTERPRETATION

- 4.1** Bidders shall promptly notify the Prime Designer of any ambiguity, inconsistency, or error which they may discover upon examination of the Contract Documents, the site, and local conditions.
- 4.2** Bidders requiring clarification or interpretation of the Contract Documents shall make a written request to the Prime Designer. The Prime Designer will answer such requests if received seven (7) calendar days before the date for receipt of the bids.
- 4.3** Interpretation, correction, or change in the Contract Documents will be made by written Addendum which will become part of the Contract Documents. Neither the Housing Authority nor the Prime Designer will be held accountable for any oral interpretations, corrections, or changes.

- 4.4 Each individual or firm recorded (registered plan holder) as having requested a set of Contract Documents will be electronically notified via email when any addenda are issued. HARD COPY addenda will **not** be issued on electronically bid projects. It is the Bidder's responsibility to view the information on the website.
- 4.5 Copies of addenda will be made available for inspection at the locations listed in the Advertisement for Bid where Contract Documents are on file or available at www.biddocsonline.com under the "addenda tab".

ARTICLE 5 - PREPARATION AND SUBMISSION OF BIDS

5.1 Forms and Bid Preparation

Bids shall be submitted electronically on the "**Form for General Bid**" or the "**Form for Sub-Bid**" at www.biddocsonline.com, as appropriate and available at no cost. The forms enclosed in the Project Manual shall not be extracted or used.

- 5.1.1 All bidders must complete and submit the **electronic bidder registration form** (Signature Authorization Form – hard copy) to BidDocs ONLINE Inc. [61 Skyfields Drive, Groton, MA 01450]. The form must be received by BidDocs ONLINE Inc. at least three business days prior to the bidding opening for processing. The Awarding Authority, the designer or BidDocs ONLINE Inc. will not be held accountable if the bidder fails to submit the electronic bidder registration form in a timely manner. Instructions to submit the form are in the Contract Documents and are available at www.biddocsonline.com (click on the "Tutorial" tab at the bottom footer – **Tutorial #1**).
- 5.1.2 All entries on the bid form shall be made online. Any documents that are attached to the bid must be in a pdf format.
- 5.1.3 Sums shall be expressed in both words and figures in the space indicated on the bid form. Where there is a discrepancy between the bid sum expressed in words and the bid sum expressed in figures, the words shall control. Note: The electronic bid forms automatically match the "word" amount to the numeric "figure" amount entered.
- 5.1.4 If the requirement of Performance and Payment Bonds for filed sub-contractors is left blank by the General Bidder on the Form for General Bid, the Awarding Authority shall interpret this as a "yes". No increase in contract price will be allowed for providing these bonds. Note: The system requires that the general bidder explicitly acknowledge yes or no.
- 5.1.5 Costs for subcontractor's bond premiums shall be paid for by the General Contractor in accordance with M.G.L. c.149 §44F.

5.2 Bid Deposits shall be:

- 5.2.1 at least five percent (5%) of the greatest possible bid amount, considering all alternates;
- 5.2.2 made payable to the **Housing Authority**;
- 5.2.3 conditioned upon faithful performance by the principal of the agreements contained in the bid, and
- 5.2.4 in the form of:
- .1 cash,
 - .2 certified check, treasurer's or cashier's check issued by a responsible bank or trust company, or
 - .3 a bid bond issued by a surety company licensed to do business in the Commonwealth of Massachusetts.
- 5.2.5 retained until the execution and delivery of the Owner/Contractor Agreement if they represent the bid deposit of one of the three (3) lowest responsible and eligible General Bidders or one of the three (3) lowest Sub-bidders in a filed sub-bid trade, or a sub-bidder listed by one of the three (3) lowest General Bidders.

Note: Both the "bid bond" or "check" bid deposits are to be scanned and uploaded to the system as a pdf file. **IMPORTANT NOTICE:** If the bidder elects to make a bid deposit in the form of "cash" or "check" the bidder must have the cash or check physically delivered to the Awarding Authority prior to the date and time of the bid opening.

5.3 Electronic Submission of Filed Sub-Bids

Sub-bids, including the bid deposit, DCAMM Sub-Bidder Certificate of Eligibility and a signed DCAMM Sub-Bidder Update Statement shall be submitted electronically online at www.biddocsonline.com. **No hard copy bids will be accepted.** The **Bidder will receive an email confirmation** upon clicking the "submit bid or resubmit bid" button. Contact BidDocs ONLINE Inc. at support@biddocsonline.com or call 978-888-3350 if you do not receive a confirmation email upon submitting a bid.

- 5.3.1 Date and time for receipt of bids is set forth in the Advertisement.
- 5.3.2 Timely submission of a bid online shall be the full responsibility of the Bidder.

5.4 Electronic Submission of General Bids

General Bids, including the bid deposit, DCAMM Certificate of Eligibility and Update Statement (CQ3) shall be submitted electronically online at www.biddocsonline.com. **No hard copy bids will be accepted.** The **Bidder will receive an email confirmation** upon clicking the "submit bid or resubmit bid" button. Contact BidDocs ONLINE Inc. at support@biddocsonline.com or call 978-888-3350 if you do not receive a confirmation email upon submitting a bid.

5.4.1 Date and time for receipt of bids is set forth in the Advertisement.

5.4.2 Timely submission of a bid online shall be the full responsibility of the Bidder.

5.5 Sub-Trade Solicitations

5.5 .1 If the General Bidders are instructed to carry an amount for a given sub-trade listed under Item 2, General Bidders shall list the sub-trade, and amount provided by the Housing Authority. The line under **bonds required** on the General Bid Form should select the “carry allowance” option on the electronic bid form in order for subparagraph 5.5.2.2 to be applicable.

5.5 .2 Upon solicitation of a subcontractor to perform the work required by the sub-trade as mentioned in subparagraph 5.5.1, the selected General Contractor’s contract amount will be adjusted as follows:

- .1 The difference between the subcontract amount and the amount carried in the bid.
- .2 The total cost of the subcontractor's bonds, if the selected General Contractor requires such bonds after the solicitation is completed and if the selected General Contractor complied with 5.4.1 above, and
- .3 The resultant cost difference for General Contractor's Bonds premiums.

5.5.3 Overhead and Profit for supervision of the sub-trade in question shall be included by all General Bidders in Item 1.

5.5 4 Additional overhead and profit is not allowed on the incremental difference as stated in M.G.L. c.149 §44F (4)(a)(2) nor on the costs for the additional bond premiums.

ARTICLE 6 - ALTERNATES

General Bidders

6.1 Each General Bidder shall acknowledge Alternates by selecting the individual Alternate number in Section C on the Form for General Bid and enter the dollar amount of addition or subtraction necessitated by each Alternate listed in the corresponding space.

6.2 General bidders shall enter on the Form for General Bid a single amount for each Alternate which shall consist of the Sub-bidders’ amounts and the amount for work performed by the General Contractor.

6.3 In the event an Alternate does not involve a change in dollar value, the General Bidder shall so indicate by listing the individual Alternate number and acknowledge the Alternate by inserting “0” in the corresponding space provided for the dollar value of that Alternate. Note: The system will only allow a numeric value to be entered.

6.4 The Low Bidder will be determined on the basis of the sum of the base bid and the accepted alternates.

Filed Sub Bidders

6.5 Each Sub-bidder shall acknowledge Alternates by selecting the individual Alternate number in Section A on the Form for Sub Bid and enter the dollar amount of addition or subtraction necessitated by each Alternate listed in the corresponding space.

6.6 If an Alternate does not involve a change to a sub-trade’s dollar value, the sub bidder shall so indicate by listing the individual alternate number in the space provided and acknowledge the alternate by inserting “0” in the corresponding space provided for the dollar value of that Alternate. Note: The system will only allow a numeric value to be entered.

6.7 If the alternate does not affect the sub-trade category of work so indicate by writing “0”. Sub-bidders must acknowledge all alternates.

ARTICLE 7 - WITHDRAWAL OF BIDS

7.1 Before Opening of Bids

7.1.1 Any bid may be withdrawn (retracted) prior to the time designated for receipt of bids upon clicking the “**Retract Bid**” button. The bidder and Housing Authority will receive an email confirming that the bidder retracted the bid.

7.1.2 Withdrawn bids may be modified and resubmitted up to the time designated for the receipt of bids.

7.2 After Opening of Bids

Bidders may withdraw a bid, without penalty, any time up to the time of Award as defined in paragraph 8.1, and upon demonstrating, to the satisfaction of the Housing Authority, that a bona fide clerical error was made during the preparation of the bid. Failure to conclusively demonstrate a bona fide clerical error may result in forfeiture of the bid deposit.

7.3 In the event of a general bid withdrawal after opening of bids, the Awarding Authority shall consider the bid from next lowest eligible and responsible bidder.

7.4 Sub-bid Withdrawal/Substitution

7.4.1 Selection - Should a filed sub-bidder listed on the Form for General Bid of the selected General Contractor (per Article 8 of these instructions) withdraw its bid, be unable to provide performance and payment bonds as required by the selected General Contractor, or otherwise refuse to sign a subcontract with the selected General Contractor, the Housing Authority and the selected General Contractor shall consider the other sub-bids to which the Housing Authority and the selected General Contractor make no objection and substitute a new sub-bidder for such trade.

7.4.2 Process: If the selected General Contractor:

- .1 required bonds (on the Form for General Bid) for the sub-bidder who withdrew** then the selected General Contractor's contract amount shall be adjusted to account for:
 - .1 the difference between the amount of the sub-bid listed on the Form for General Bid and the amount of the replacement sub-bid, and
 - .2 the incremental difference in the cost of the General Contractor bonds premiums, but
 - .3 there will be no compensation for additional subcontractor bond premiums
- .2 did not require bonds (on the Form for General Bid) for the sub-bidder who withdrew** and now the selected General Contractor wants bonds from the replacement sub-bidder, then the selected General Contractor's contract amount shall be adjusted:
 - .1 to account for the difference between the amount of the sub-bid listed on the Form for General Bid and the amount of the replacement sub-bid,
 - .2 the amount for the new sub-bidder's performance and payment bonds, and
 - .3 the incremental difference in the cost of the General Contractor bond premiums.

7.4.3 There shall be no adjustment to the selected General Contractor's contract amount except as set forth in 7.4.2.1 and 7.4.2.2. Additional overhead and profit is not allowed on the incremental difference in the sub-bids or on the costs for the additional bond premiums.

ARTICLE 8 - CONTRACT AWARD

8.1 Award means both the determination and selection of the lowest, responsible and eligible bidder, by Housing Authority board vote.

8.2 The Housing Authority will award the contract to the lowest responsible and eligible bidder within thirty days, Saturdays, Sundays, and legal holidays excluded after the opening of bids in accordance with M.G.L. c.149 §44A.

8.3 The Contract will be awarded to the lowest responsible and eligible Bidder, except in the event of substitution as provided under M.G.L. c.149 §§44E and 44F, in which cases the procedure as required by said sections shall govern the award of the Contract.

- 8.4 The award of this Contract is subject to the approval of the Undersecretary of the Commonwealth of Massachusetts, Department of Housing and Community Development (DHCD) or its Designee. Contracts without DHCD approval shall not be considered valid.
- 8.5 The Housing Authority also reserves the right to waive any informality in or to reject any or all Bids if it be in the public interest to do so.
- 8.6 The Housing Authority also reserves the right to reject any sub-bid if it determines that such sub-bid does not represent the bid of a person competent to perform the work as specified, or if less than three sub-bids are received for a sub-trade, or if bid prices are not reasonable for acceptance without further competition and require a change in the scope of work.
- 8.7 As used herein, the term "lowest responsible and eligible bidder" shall mean the General Bidder whose bid is the lowest of those Bidders demonstrably possessing the skill, ability, and integrity necessary for the faithful performance of the work, and who meets the requirements for Bidders set forth in M.G.L. c.149 §44A-J and is not debarred from bidding under M.G.L. c.149 §44C; and who shall certify that they are able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work.
- 8.8 Bidders' attention is directed to 01.11.00 for any additional selection criteria that may be a condition of Award of this project.

ARTICLE 9 - FORMS REQUIRED FOR CONTRACT APPROVAL

- 9.1 Upon Award, the General Bidder shall complete the following forms to ensure prompt contract validation. These forms will be provided to the selected General Bidder by DHCD. Submit (3) originals of each.
- 9.2 **Owner/Contractor Agreement and Form of Corporate Vote.** (Form 00.53.00)
- 9.3.1 **Form of Performance Bond and Form of Payment Bond** must be submitted by the General Contractor on DHCD's Forms 00.61.13 and 00.61.16, in accordance with Article 18 of the General Conditions. The dates on the bonds must coincide with the contract date, and a current Power-of-Attorney must be attached to each bond.
- 9.3.2 **Performance and Payment Bonds** must also be submitted for all filed subcontractors, if required by the General Bidder on its Form for General Bid, in the total amount of the subcontract payable to the General Contractor.
- 9.4.1 **Insurance Certificates** for the General Contractor and all **filed subcontractors** are required and must be submitted in accordance with Article 16 of the General Conditions.

- 9.4.2** General Contractors must indicate on Builders Risk Insurance Certificate or installation floater if stored materials are covered.
- 9.5** **Form of Contractor's Equal Employment Certification** in accordance with Specification Section 00.73.36 (Form 00.73.36.01).
- 9.5.1** **Form of Sub-Contractor's Equal Employment Certification** in accordance with Specification Section 00.73.36 (Form 00.73.36.02).
- 9.6.1** **Form of Subcontract for all filed subcontractors** - executed and submitted on the statutory subcontract form (Form 00.62.00).
- 9.7** **Statement of Management on Internal Accounting Controls and a Statement prepared by a CPA** expressing an opinion to the state of Management Controls, as required by M.G.L. c.30 §39R. This applies to the General Contractor only.
- 9.8** **Evidence of Certification with 40 CFR part 745 Lead Renovation, Repair and Painting Program.**

ARTICLE 10 - CONTRACT VALIDATION

- 10.1** The Owner-Contractor Agreement shall not be valid until signed by the Undersecretary of the Department of Housing and Community Development (Department) or its Designee.
- 10.2** The Notice to Proceed for construction shall not be issued until the Owner/Contractor Agreement has been validated by the Undersecretary of the Department or its Designee.
- 10.3** Incomplete or unacceptable submissions of forms required by paragraphs 9.2 - 9.7 will delay the validation of the Owner/Contractor Agreement by the Department.

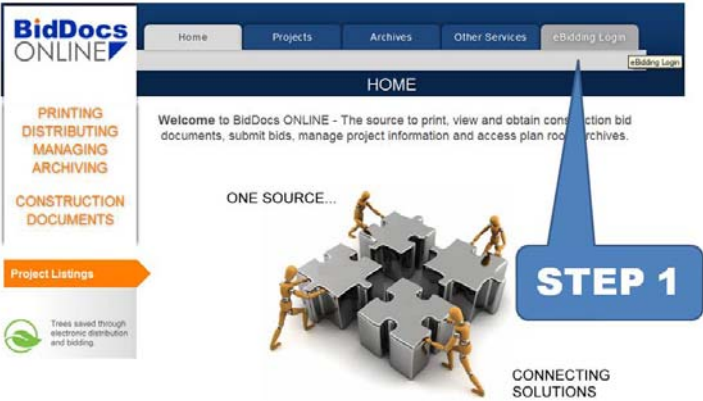
END OF SECTION

TUTORIAL # 1 eBidding REGISTRATION

Below are the step by step instructions on how to register to use BidDocs ONLINE eBidding. There is no cost to register.

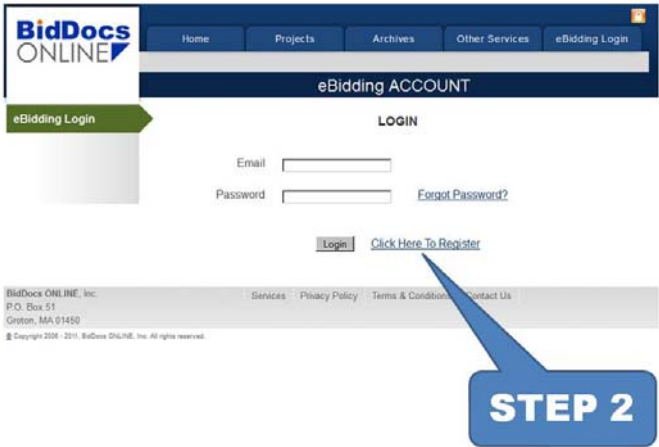
Start by going to:

www.biddocsonline.com



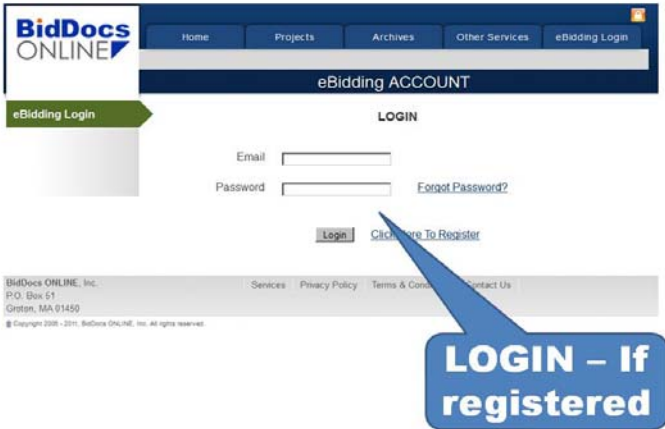
eBidding Registration Instructions 1

STEP 1: Click on the “eBidding Login” tab at the top of the page.



eBidding Registration Instructions 2

STEP 2a: If your company has not previously registered, click on the text “[Click Here To Register](#)”.



eBidding Registration Instructions 3

STEP 2b: If your company has previously registered, login by entering the registered email address and password and then click the “Login” button.

Note: Your company will have only one registration and all individuals must use the same email and password.

TUTORIAL # 1 - eBidding Registration

STEP 3

STEP 4

STEP 3: All fields must be completed in the registration form.

STEP 4: After completing the registration form, you must read and acknowledge the Terms and Conditions. Click the “Submit” button.

eBidding Registration Instructions 4

STEP 5

STEP 5: Enter the email and password previously created during the registration process and click “Login”.

eBidding Registration Instructions 5

STEP 6

STEP 6: After logging in, the account authorization screen will appear. You must click “Print Form” to proceed to Step 7.

eBidding Registration Instructions 6

TUTORIAL # 1 - eBidding Registration

STEP 7

Unique Bar Code Identifies Your Bid

STEP 7: Print and notarize the form (sign in blue ink). Return the original “Electronic Bidder Signature Authorization Form” to BidDocs ONLINE Inc.

The mailing address is:
BidDocs ONLINE Inc.
P.O. Box 51
61 Skyfields Drive (for overnight)
Groton, MA 01450

Your company is responsible for ensuring that BidDocs ONLINE receives the signed Electronic Bidder Signature Authorization Form a minimum of three (3) business days prior to the bid date. BidDocs ONLINE will notify you by email that your form has been received and processed. A unique bar code will identify your bid paperwork.

Note: *The registration form will remain “active” until such time that your company requests a change in the person signing the form or a change in the company address or other pertinent company information. Your company is responsible for printing and resubmitting an updated form when changes occur.*

STEP 8

STEP 8: While the Electronic Bidder Signature Authorization Form is being processed, you may commence completing the common forms (*DCAM Eligibility and Sections 1-4 of the DCAM Update Statement*) that are required for MGL c. 149 bids.

Summary: **THIS PROJECT IS BEING ELECTRONICALLY BID AND HARD COPY BIDS WILL NOT BE ACCEPTED BY THE AWARDING AUTHORITY.** You must submit your bid electronically at www.biddocsonline.com. At any time during the bidding process, you may print the various bid documents for your company’s records. Additional instructions to complete the other bid forms are accessible on the BidDocs ONLINE website (click on the “Tutorial” tab at the bottom footer).

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Section 00.41.00
FORM FOR GENERAL BID

TO THE AWARDING AUTHORITY

A. The undersigned proposes to furnish all labor and material required for _____ for the _____ in _____ Project _____, Massachusetts, in accordance with the accompanying plans and specification prepared by _____ for _____ Name of Engineer or Architect the contract price specified below, subject to additions and deductions according to the terms of the specifications.

B. This bid includes addenda numbered: _____

C. The proposed contract price is:

Bid Amount in Words		Dollars \$	Bid Amount in Numbers
For Alternate	No. _____	Add \$ _____	Subtract \$ _____
	No. _____	\$ _____	\$ _____
	No. _____	\$ _____	\$ _____
	No. _____	\$ _____	\$ _____
	No. _____	\$ _____	\$ _____

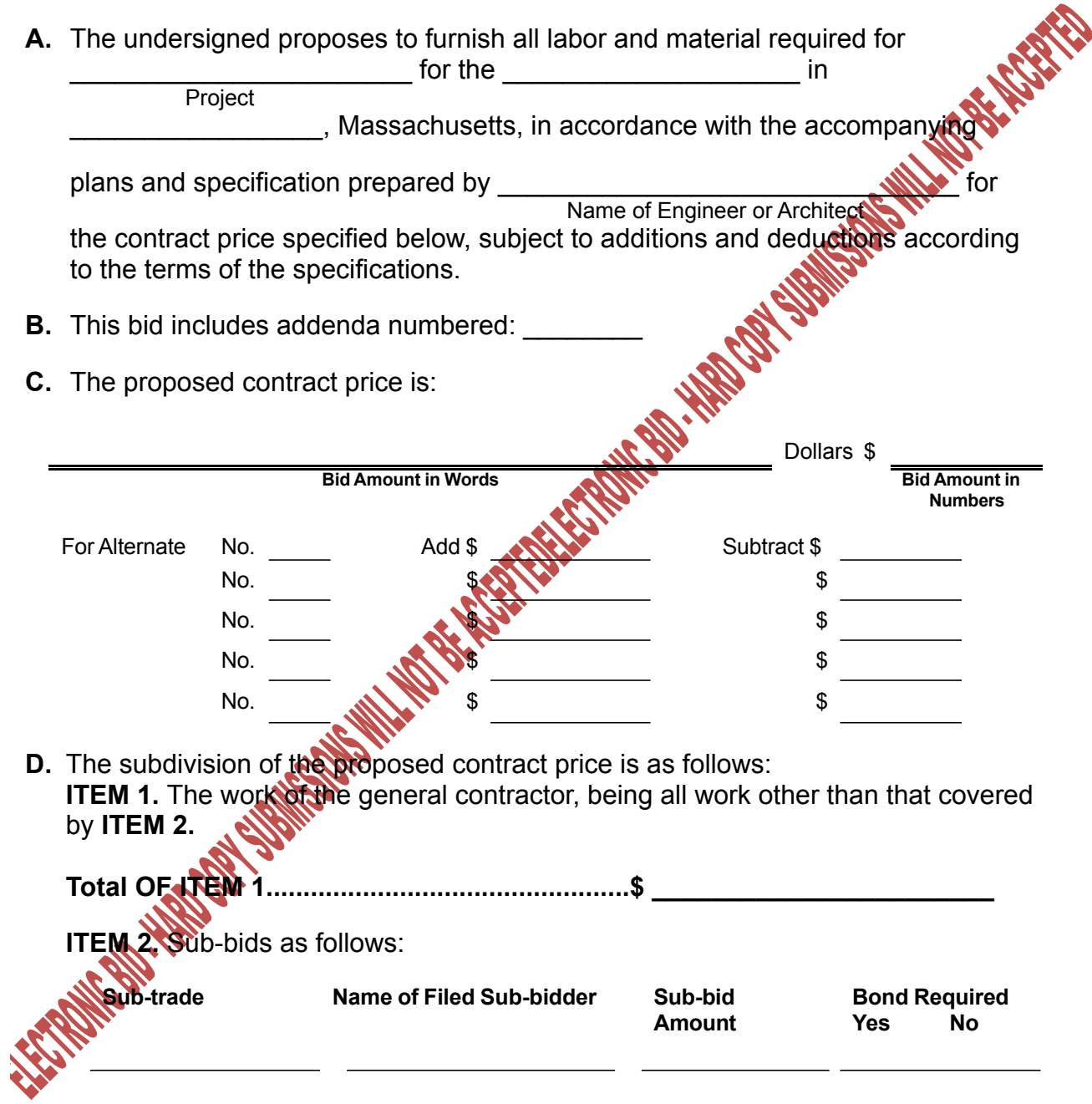
D. The subdivision of the proposed contract price is as follows:
ITEM 1. The work of the general contractor, being all work other than that covered by **ITEM 2.**

Total OF ITEM 1.....\$ _____

ITEM 2. Sub-bids as follows:

Sub-trade	Name of Filed Sub-bidder	Sub-bid Amount	Bond Required	
			Yes	No
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

BDO SmartSpec - DHCD c. 149 Over \$150K V2 - 26/JAN/2018



_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

TOTAL OF ITEM 2.....\$ _____

The undersigned agrees that each of the above named sub-bidders will be used for the work indicated at the amount stated, unless a substitution is made. The undersigned further agrees to pay the premiums for the performance and payment bonds furnished by sub-bidders as requested herein and that all of the cost of all such premiums is included in the amount set forth in Item I of this bid.

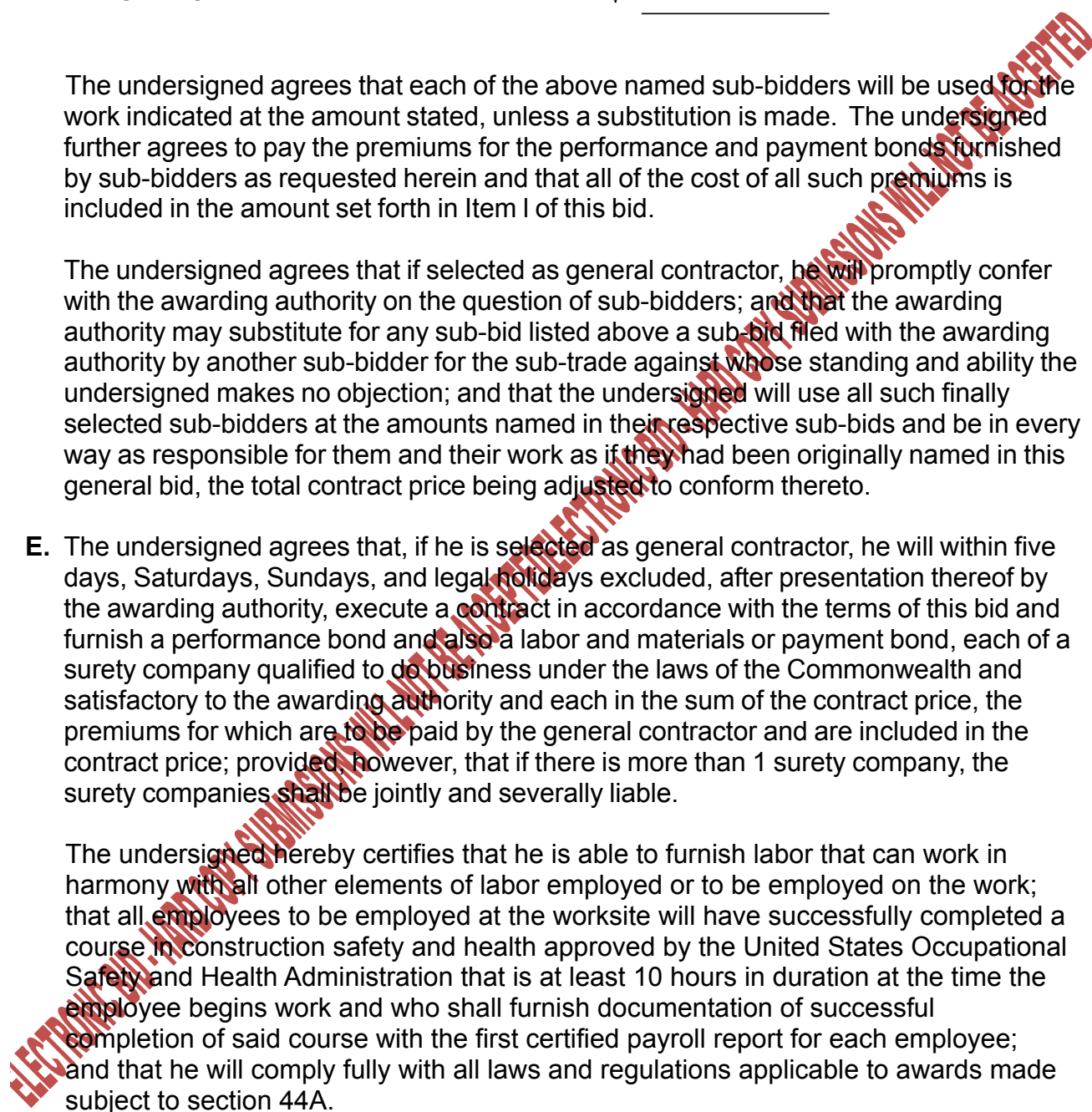
The undersigned agrees that if selected as general contractor, he will promptly confer with the awarding authority on the question of sub-bidders; and that the awarding authority may substitute for any sub-bid listed above a sub-bid filed with the awarding authority by another sub-bidder for the sub-trade against whose standing and ability the undersigned makes no objection; and that the undersigned will use all such finally selected sub-bidders at the amounts named in their respective sub-bids and be in every way as responsible for them and their work as if they had been originally named in this general bid, the total contract price being adjusted to conform thereto.

- E.** The undersigned agrees that, if he is selected as general contractor, he will within five days, Saturdays, Sundays, and legal holidays excluded, after presentation thereof by the awarding authority, execute a contract in accordance with the terms of this bid and furnish a performance bond and also a labor and materials or payment bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the awarding authority and each in the sum of the contract price, the premiums for which are to be paid by the general contractor and are included in the contract price; provided, however, that if there is more than 1 surety company, the surety companies shall be jointly and severally liable.

The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that he will comply fully with all laws and regulations applicable to awards made subject to section 44A.

The undersigned further certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the word "person" shall mean natural person, joint venture,

BDO SmartSpec - DHCD c. 149 Over \$150K V2 - 26/JAN/2018



partnership, corporation or other business or legal entity. The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated there under.

NAME OF BIDDER

SIGNATURE AND TITLE OF PERSON SIGNING BID

Date:

BUSINESS ADDRESS

ELECTRONIC BID - HARD COPY SUBMISSIONS WILL NOT BE ACCEPTED

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SPECIAL NOTICE TO AWARDING AUTHORITY
BIDDERS' UPDATE STATEMENTS ARE NOT PUBLIC RECORDS AND
ARE NOT OPEN TO PUBLIC INSPECTION (M.G.L. C.149, §44D)

EFFECTIVE MARCH 30, 2010

Commonwealth of Massachusetts
Division of Capital Asset Management
PRIME/GENERAL CONTRACTOR
UPDATE STATEMENT

TO ALL BIDDERS AND AWARDING AUTHORITIES

A COMPLETED AND SIGNED PRIME/GENERAL CONTRACTOR UPDATE STATEMENT MUST BE SUBMITTED WITH EVERY PRIME/GENERAL BID FOR A CONTRACT PURSUANT TO M.G.L. c.149, §44A AND M.G.L. c. 149A. ANY PRIME/GENERAL BID SUBMITTED WITHOUT AN APPROPRIATE UPDATE STATEMENT IS INVALID AND MUST BE REJECTED.

Caution: This form is to be used for submitting Prime/General Contract bids. It is not to be used for submitting Filed Sub-Bids or Trade Sub-Bids.

AWARDING AUTHORITIES

If the Awarding Authority determines that the bidder does not demonstrably possess the skill, ability, and integrity necessary to perform the work on the project, it must reject the bid.

BIDDER'S AFFIDAVIT

I swear under the pains and penalties of perjury that I am duly authorized by the bidder named below to sign and submit this Prime/General Contractor Update Statement on behalf of the bidder named below, that I have read this Prime/General Contractor Update Statement, and that all of the information provided by the bidder in this Prime/General Contractor Update Statement is true, accurate, and complete as of the bid date.

Bid Date

Print Name of Prime/General Contractor

Project Number (or
name if no number)

Business Address

Awarding Authority

Telephone Number

SIGNATURE⇒

Bidder's Authorized Representative

INSTRUCTIONS

INSTRUCTIONS TO BIDDERS

- This form must be completed and submitted by all Prime/General contractors bidding on projects pursuant to M.G.L. c. 149, §44A and M.G.L. c. 149A.
- You must give complete and accurate answers to all questions and provide all of the information requested. **MAKING A MATERIALLY FALSE STATEMENT IN THIS UPDATE STATEMENT IS GROUNDS FOR REJECTING YOUR BID AND FOR DEBARRING YOU FROM ALL PUBLIC CONTRACTING.**
- **This Update Statement must include all requested information that was not previously reported on the Application used for your firm's most recently issued (not extended or amended) Prime/General Contractor Certificate of Eligibility. The Update Statement must cover the entire period since the date of your Application, NOT since the date of your Certification.**
- You must use this official form of Update Statement. Copies of this form may be obtained from the awarding authority and from the Asset Management Web Site: www.mass.gov/dcam.
- If additional space is needed, please copy the appropriate page of this Update Statement and attach it as an additional sheet.
- See the section entitled "Bidding Limits" in the *Instructions to Awarding Authorities* for important information concerning your bidding limits.

INSTRUCTIONS TO AWARDING AUTHORITIES

Determination of Bidder Qualifications

- It is the awarding authority's responsibility to determine who is the lowest eligible and responsible bidder. You must consider all of the information in the low bidder's Update Statement in making this determination. **Remember:** this information was not available to the Division of Capital Asset Management at the time of certification.
- The bidder's performance on the projected listed in Parts 1 and 2 must be part of your review. Contact the project references.
- **AWARDING AUTHORITIES ARE STRONGLY ENCOURAGED TO REVIEW THE LOW BIDDER'S ENTIRE CERTIFICATION FILE AT THE DIVISION OF CAPITAL ASSET MANAGEMENT. Telephone (617) 727-9320 for an appointment.**

Bidding Limits

Single Project Limit: The total amount of the bid, including all alternates, may not exceed the bidder's Single Project Limit.

Aggregate Work Limit: The annual value of the work to be performed on the contract for which the bid is submitted,

when added to the annual cost to complete the bidder's other currently held contracts, may not exceed the bidder's Aggregate Work Limit. Use the following procedure to determine whether the low bidder is within its Aggregate Work Limit:

Step 1 Review Update Statement Question #2 to make sure that all requested information is provided and that the bidder has accurately calculated and totaled the annualized value of all incomplete work on its currently held contracts (column 9).

Step 2 Determine the annual dollar value of the work to be performed on your project. This is done as follows:

- (i) If the project is to be completed in less than 12 months, the annual dollar value of the work is equal to the full amount of the bid.
- (ii) If the project will take more than 12 months to complete, calculate the number of years given to complete the project by dividing the total number of months in the project schedule by 12 (calculate to 3 decimal places), then divide the amount of the bid by the calculated number of years to find the annual dollar value of the work.

Step 3 Add the annualized value of all of the bidder's incomplete contract work (the total of column 9 on page 5) to the annual dollar value of the work to be performed on your project. **The total may not exceed the bidder's Aggregate Work Limit.**

Correction of Errors and Omissions in Update Statements

Matters of Form: An awarding authority shall not reject a contractor's bid because there are mistakes or omissions of form in the Update Statement submitted with the bid, provided the contractor promptly corrects those mistakes or omissions upon request of the awarding authority. [810 CMR 8.05(1)].

Correction of Other Defects: An awarding authority may, in its discretion, give a contractor notice of defects, other than mistakes or omissions of form, in the contractor's Update Statement, and an opportunity to correct such defects, provided the correction of such defects is not prejudicial to fair competition. An awarding authority may reject a corrected Update Statement if it contains unfavorable information about the contractor that was omitted from the Update Statement filed with the contractor's bid. [810 CMR 8.05(2)].

PART 1 - COMPLETED PROJECTS

LIST ALL PUBLIC AND PRIVATE *BUILDING* PROJECTS YOUR FIRM HAS COMPLETED SINCE THE DATE OF APPLICATION FOR YOUR MOST RECENTLY ISSUED (NOT EXTENDED OR AMENDED) DCAM CERTIFICATE OF ELIGIBILITY. YOU MUST REPORT ALL REQUESTED INFORMATION NOT PREVIOUSLY REPORTED ON THAT DCAM APPLICATION*.

PROJECT TITLE & LOCATION	WORK CATEGORY	CONTRACT PRICE	START DATE	DATE COMPLETED

Attach additional sheets if necessary

* If your firm has been terminated from a project prior to completion of the work or has failed or refused to complete its work under any contract, full details and an explanation must be provided. See Part 3 of this Update Statement.

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH COMPLETED PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
	OWNER: DESIGNER: GC:		
	OWNER: DESIGNER: GC:		
	OWNER: DESIGNER: GC:		
	OWNER: DESIGNER: GC:		
	OWNER: DESIGNER: GC:		
	OWNER: DESIGNER: GC:		

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above, either through a business or family relationship? YES NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship? YES NO

If you have answered YES to either question, explain. _____

PART 2 - CURRENTLY HELD CONTRACTS

LIST ALL PUBLIC AND PRIVATE BUILDING AND NON-BUILDING *CONSTRUCTION* PROJECTS YOUR FIRM HAS UNDER CONTRACT ON THIS DATE REGARDLESS OF WHEN OR WHETHER THE WORK COMMENCED.

1	2	3	4	5	6	7	8	9
PROJECT TITLE & LOCATION	WORK CATEGORY	START AND END DATES	ON SCHEDULE (yes / no)	CONTRACT PRICE	% NOT COMPLETE	\$ VALUE OF WORK NOT COMPLETE (col. 5 X col. 6)	NO. OF YEARS REMAINING (see note below)	ANNUALIZED VALUE OF INCOMPLETE WORK (col. 7 ÷ col. 8) (divided by)

ANNUALIZED VALUE OF ALL INCOMPLETE CONTRACT WORK (Total of Column 9)

\$ _____

Column 8

- If less than one year is left in the project schedule, write 1.
- If more than 12 months are left in the project schedule, divide the number of months left in the project schedule by 12 (calculate to three decimal places).

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH INCOMPLETE PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
	OWNER:		
	DESIGNER:		
	GC:		
	OWNER:		
	DESIGNER:		
	GC:		
	OWNER:		
	DESIGNER:		
	GC:		
	OWNER:		
	DESIGNER:		
	GC:		
	OWNER:		
	DESIGNER:		
	GC:		

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship? YES NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship? YES NO

If you have answered YES to either question, explain. _____

PART 3 - PROJECT PERFORMANCE

For Parts 3 and 4, if you answer YES to any question, please provide on a separate page a complete explanation. Information you provide herein must supplement the Application for your most recently issued (not extended or amended) DCAM Certificate of Eligibility. You must report all requested information not previously reported on that DCAM Application for Prime/General Certificate of Eligibility. Include all details [project name(s) and location(s), names of all parties involved, relevant dates, etc.].

	YES	NO
1. Has your firm been terminated on any contract prior to completing a project or has any officer, partner or principal of your firm been an officer, partner or principal of another firm that was terminated or failed to complete a project?	<input type="checkbox"/>	<input type="checkbox"/>
2. Has your firm failed or refused either to perform or complete any of its work under any contract prior to substantial completion?	<input type="checkbox"/>	<input type="checkbox"/>
3. Has your firm failed or refused to complete any punch list work under any contract?	<input type="checkbox"/>	<input type="checkbox"/>
4. Has your firm filed for bankruptcy, or has any officer, principal or individual with a financial interest in your current firm been an officer, principal or individual with a financial interest in another firm that filed for bankruptcy?	<input type="checkbox"/>	<input type="checkbox"/>
5. Has your surety taken over or been asked to complete any of your work under any contract?	<input type="checkbox"/>	<input type="checkbox"/>
6. Has a payment or performance bond been invoked against your current firm, or has any officer, principal or individual with a financial interest in your current firm been an officer, principal or individual with a financial interest in another firm that had a payment or performance bond invoked?	<input type="checkbox"/>	<input type="checkbox"/>
7. Has your surety made payment to a materials supplier or other party under your payment bond on any contract?	<input type="checkbox"/>	<input type="checkbox"/>
8. Has any subcontractor filed a demand for direct payment with an awarding authority for a public project on any of your contracts?	<input type="checkbox"/>	<input type="checkbox"/>
9. Have any of your subcontractors or suppliers filed litigation to enforce a mechanic's lien against property in connection with work performed or materials supplied under any of your contracts?	<input type="checkbox"/>	<input type="checkbox"/>
10. Have there been any deaths of an employee or others occurring in connection with any of your projects?	<input type="checkbox"/>	<input type="checkbox"/>
11. Has any employee or other person suffered an injury in connection with any of your projects resulting in their inability to return to work for a period in excess of one year?	<input type="checkbox"/>	<input type="checkbox"/>

PART 4 - Legal or Administrative Proceedings; Compliance with Laws

Please answer the following questions. Information must supplement all judicial and administrative proceedings involving bidder’s firm, which were instituted or concluded (adversely or otherwise) since your firm’s Application for your most recently issued (not extended or amended) Certificate of Eligibility. You must report all requested information not previously reported on that DCAM Application for Prime/General Certificate of Eligibility.

The term “administrative proceeding” as used in this Prime/General Contractor Update Statement includes (i) any action taken or proceeding brought by a governmental agency, department or officer to enforce any law, regulation, code, legal, or contractual requirement, except for those brought in state or federal courts, or (ii) any action taken by a governmental agency, department or officer imposing penalties, fines or other sanctions for failure to comply with any such legal or contractual requirement.

The term “anyone with a financial interest in your firm” as used in this Section “I”, shall mean any person and/or entity with a 5% or greater ownership interest in the applicant’s firm.

If you answer YES to any question, on a separate page provide a complete explanation of each proceeding or action and any judgment, decision, fine or other sanction or result. Include all details (name of court or administrative agency, title of case or proceeding, case number, date action was commenced, date judgment or decision was entered, fines or penalties imposed, etc.).

	YES	NO
1. Have any civil, judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to the procurement or performance of any construction contract, including but not limited to actions to obtain payment brought by subcontractors, suppliers or others?	<input type="checkbox"/>	<input type="checkbox"/>
2. Have any criminal proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to the procurement or performance of any construction contract including, but not limited to, any of the following offenses: fraud, graft, embezzlement, forgery, bribery, falsification or destruction of records, or receipt of stolen property?	<input type="checkbox"/>	<input type="checkbox"/>
3. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state’s or federal procurement laws arising out of the submission of bids or proposals?	<input type="checkbox"/>	<input type="checkbox"/>
4. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of M.G.L. Chapter 268A, the State Ethics Law?	<input type="checkbox"/>	<input type="checkbox"/>

PART 4 - Legal or Administrative Proceedings; Compliance with Laws (continued)

	YES	NO
5. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state or federal law regulating hours of labor, unemployment compensation, minimum wages, prevailing wages, overtime pay, equal pay, child labor or worker's compensation?	<input type="checkbox"/>	<input type="checkbox"/>
6. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state or federal law prohibiting discrimination in employment?	<input type="checkbox"/>	<input type="checkbox"/>
7. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a claim of repeated or aggravated violation of any state or federal law regulating labor relations?	<input type="checkbox"/>	<input type="checkbox"/>
8. Have any proceedings by a municipal, state, or federal agency been brought, concluded, or settled relating to decertification, debarment, or suspension of your firm or any principal or officer or anyone with a financial interest in your firm from public contracting?	<input type="checkbox"/>	<input type="checkbox"/>
9. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of state or federal law regulating the environment?	<input type="checkbox"/>	<input type="checkbox"/>
10. Has your firm been fined by OSHA or any other state or federal agency for violations of any laws or regulations related to occupational health or safety? Note: this information may be obtained from OSHA's Web Site at www.osha.gov	<input type="checkbox"/>	<input type="checkbox"/>
11. Has your firm been sanctioned for failure to achieve DBE/MBE/WBE goals, workforce goals, or failure to file certified payrolls on any public projects?	<input type="checkbox"/>	<input type="checkbox"/>
12. Other than previously reported in the above paragraphs of this Section I, have any administrative proceedings or investigations involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled by any local, state or federal agency relating to the procurement or performance of any construction contract?	<input type="checkbox"/>	<input type="checkbox"/>
13. Are there any other issues that you are aware which may affect your firm's responsibility and integrity as a building contractor?	<input type="checkbox"/>	<input type="checkbox"/>

PART 5 - SUPERVISORY PERSONNEL

List all supervisory personnel, such as project managers and superintendents, who will be assigned to the project if your firm is awarded the contract. **Attach the resume of each person listed below.**

NAME	TITLE OR FUNCTION

PART 6 - CHANGES IN BUSINESS ORGANIZATION OR FINANCIAL CONDITION

Have there been any changes in your firm’s business organization, financial condition or bonding capacity since the date your current Certificate of Eligibility was issued? Yes No
If YES, attach a separate page providing complete details.

PART 7 – LIST OF COMPLETED CONSTRUCTION PROJECTS SUBMITTED TO THE DIVISION OF CAPITAL ASSET MANAGEMENT.

Attach here a copy of the list of completed construction projects which was submitted with your firm’s DCAM Application for your most recently issued (not extended or amended) DCAM Certificate of Eligibility. The Attachment must include a complete copy of the entire Section G – “Completed Projects” and the final page – “Certification” (Section J) containing the signature and date that the Completed Projects list (Section G) was submitted to the Division of Capital Asset Management.

Section 00.52.00
OWNER-CONTRACTOR AGREEMENT
 11/07/2016

COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

This agreement made the ___ day of _____ by and between **Fitchburg Housing Authority** hereinafter called the "Owner", and **Contractor's Name** hereinafter called the "Contractor".

Witnesseth, that the Owner and the Contractor, for the consideration hereinunder named, agree as follows:

Article 1. Scope of Work: The Contractor shall perform all Work required by the Contract Documents for **200-1 Select HTG/DHW System Replacement and Heat Pump Pilot Study at 2 Units, #097147** prepared by the **C.A. Crowley Engineering** acting as and referred to in the Contract Documents as the "Prime Designer".

Article 2. Time of Completion: The Contractor shall commence work under this Contract on the date specified in the written "Notice to Proceed" and shall bring the Work to Substantial Completion within ___ calendar days of said date. Damages for delays in the performance of the Work shall be in accordance with Article 9 of the General Conditions of the Contract.

Article 3. Contract Sum: The Owner shall pay the Contractor, in current funds, for the performance of the Work, subject to additions and deductions by Change Order, of the Contract Sum of:

_____ dollars \$ _____
CONTRACT SUM IN WORDS CONTRACT SUM IN NUMBERS

The Contract Sum is divided as follows:

Item 1: The work of the Contractor, being all Work other than that covered by Item 2
 \$ _____

Item 2: Subcontractors as follows

Section - Trade	Subcontractor	Amount
1. _____	_____	\$ _____
2. _____	_____	\$ _____
3. _____	_____	\$ _____
4. _____	_____	\$ _____
5. _____	_____	\$ _____
6. _____	_____	\$ _____
7. _____	_____	\$ _____
8. _____	_____	\$ _____
9. _____	_____	\$ _____
10. _____	_____	\$ _____
Total for Item 2		\$ _____

Article 4. The Contract Documents: The following, together with this Agreement, form the contract and all are as fully a part of the contract as if attached to this Agreement or repeated herein: The Advertisement, Bidding Documents, Contract Forms, Conditions of the Contract, and Specifications as enumerated in the Table of Contents, the drawings as enumerated in the List of Contract Drawings, DHCD publication known as the Construction Handbook, and all Modifications issued after execution of the Contract. Terms used in this Agreement which are defined in the Conditions of the Contract shall have the meanings designated in those Conditions.

Article 5. Alternates: The following Alternates have been accepted and their costs are included in the Contract Sum stated in Article 3 of this Agreement: Alternate No(s): _____ and _____.

Article 6. REAP Certification: Pursuant to M.G.L. c.62(c) §49(a), the individual signing this Contract on behalf of the Contractor, hereby certifies, under the penalties of perjury, that to the best of their knowledge and belief the Contractor has complied with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

Article 7. Worker Documentation Certification: In accordance with Executive Order 481 the undersigned further certifies under the penalties of perjury that the Contractor shall not knowingly use undocumented workers in connection with the performance of this contract; that pursuant to federal requirements, the Contractor shall verify the immigration status of all workers assigned to such contractor without engaging in unlawful discrimination; and that it shall not knowingly or recklessly alter, falsify, or accept altered or falsified documents from any such worker(s). The Contractor understands and agrees that breach of any of these terms during the contract period may be regarded as a material breach, subjecting the Contractor to sanctions, including but not limited to monetary penalties, withholding of payments, contract suspension or termination.

Article 8. Conflict of Interest: The Contractor covenants, that (1) presently, there is no financial interest and shall not acquire any such interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement or which would violate M.G.L. c.268A, as amended; (2) in the performance of this Contract, no person having any such interest shall be employed by the Contractor or engaged as a subcontractor by the contractor; and (3) no partner or employee of the firm is related by blood or marriage to any Board Member or employee of the Awarding Authority."

Article 9. Validation: This Contract will not be valid until signed by the Undersecretary of the Massachusetts Department of Housing and Community Development.

In Witness Whereof, the Parties Hereto Have Caused This Instrument to be Executed Under Seal.

1 CONTRACTOR

Name of Contractor

Street

City State Zip

By: _____
Signature and Seal

Witness _____

¹ If a Corporation, attach a notarized copy of the Corporate Vote authorizing signatory to sign Contract.

2 AWARDING AUTHORITY
Fitchburg Housing Authority

50 Day Street
Fitchburg, Massachusetts 01420

Signature and Seal

Title

Attest:
² If signed by someone other than a Housing Authority member, attach a copy of Certified Board Vote authorizing the signatory to sign Contract.

DEPARTMENT OF HOUSING & COMMUNITY DEVELOPMENT

In accordance with M.G.L.c.121B, and Revisions thereto.

Undersecretary

Date

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Section 00.53.00
CERTIFICATE OF VOTE OF AUTHORIZATION
11/07/2016

_____ 20__

I hereby certify that a meeting of the Board of Directors of the:

NAME OF CORPORATION

duly called and held at _____ on the _____ day of _____ 20__

At which a quorum was present and acting, it was voted that _____

Name of Corporate Officer

of the _____, be and hereby is authorized to execute and deliver for and on behalf of the Corporation a Contract with Fitchburg Housing Authority, for work to be done at State-Aided Housing Project No. ____, ____, ____, ____, ____, in Fitchburg, Massachusetts

And to act as principal to execute bonds in connection therewith, which Contract and Bonds were presented to and made part of the records of said meeting.

I further certify that _____ Is duly qualified and acting

Name of Corporate Officer

_____ of the Corporation and that said vote has not been

Title

Repealed, rescinded or amended

A true copy of the record,

ATTEST: _____

(CORPORATE SEAL)

On this ____ day of _____ 20__, before me, the undersigned Notary Public, personally appeared _____, duly designated by the board of directors and proved to me, through satisfactory evidence of identification, which was _____, that s/he is the person whose name is signed on the foregoing documents, and acknowledged to me that s/he signed it voluntarily for its stated purpose and that it was her/his free act and deed.

Notary Public.

My Commission Expires:

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Bond Number: _____

Section 00.61.13
PERFORMANCE BOND
11/07/2016

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

KNOW ALL MEN BY THESE PRESENTS:

That we, _____ as Principal, and
_____ as Surety, are held and firmly bound
unto the **Fitchburg Housing Authority**, as **Obligee**, in the sum of
_____ **dollars** \$ _____

to be paid to the Obligee, for which payments, well and truly to be made, we bind ourselves, our respective heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said **Principal** has made a contract with the **Obligee**, bearing the date of _____ 20_____ for the construction of **200-1 Select HTG/DHW System Replacement and Heat Pump Pilot Study at 2 Units, #097147** in Fitchburg, Massachusetts.

NOW, the condition of this obligation is such that if the **Principal** and all Subcontractors under said contract shall well and truly keep and perform all the undertakings, covenants, agreement, terms and conditions of said contract on its part to be kept and performed during the original term of said contract and any extensions thereof that may be granted by the Obligee, with or without notice to the **Surety**, and during the life and any guarantee required under the contract, and shall also well and truly keep and perform all the undertakings, covenants, agreements, terms and conditions of any and all duly authorized modifications, alterations changes or additions to said contract that may hereafter be made, notice to the **Surety** of such modifications, alterations, changes or additions being hereby waived, then this obligation shall become null and void; otherwise, it shall remain in full force and virtue.

IN THE EVENT, that the contract is abandoned by the **Principal**, or in the event that the Obligee, under the provisions of Article 19 of the General Conditions of said contract terminates the employment of the **Principal** or the authority of the **Principal** to continue the work, said **Surety** hereby further agrees that said **Surety** shall, if requested in writing by the Obligee, take such action as is necessary to complete said contract.

IN WITNESS WHEREOF, the **Principal** and **Surety** have hereunto set their hands and

seals this: _____ Day of _____ 20_____.

BDO SmartSpec - DHCD c. 149 Over \$150K V2 - 26/JAN/2018

PRINCIPAL _____

SURETY _____

By: _____

By: _____

Seal

Attorney-in Fact

Attest: _____

Attest: _____

The rate for this bond is _____% for the first \$ _____

and _____% for the next \$ _____.

The total premium for this bond is \$ _____.

Bond Number: _____

Section 00.61.16
PAYMENT BOND
11/07/2016

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

KNOW ALL MEN BY THESE PRESENTS:

That we, _____ as **Principal**, and
_____ as **Surety**, are held and firmly bound unto the
Fitchburg Housing Authority, as **Obligee**, in the sum of
_____ **dollars** \$ _____

to be paid to the Obligee, for which payments, well and truly to be made, we bind ourselves, our respective heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said **Principal** has made a contract with the **Obligee**, bearing the date of _____ 20_____ for the construction of **200-1 Select HTG/DHW System Replacement and Heat Pump Pilot Study at 2 Units, #097147** in Fitchburg, Massachusetts.

NOW the conditions of this obligation are such that if the Principal and all subcontractors under said contract shall pay for all labor performed or furnished and for all materials used or employed in said contract and in any and all duly authorized modifications, alterations, extensions of time, changes or additions to said contract that may hereafter be made, notice to the Surety of such modifications, alterations, extensions of time, changes or additions being hereby waived, the foregoing to include any other purposes or items set out in, and to be subject to, provisions of M.G.L. c.30 §39A, and M.G.L. c.149 §29, as amended, then this obligation shall become null and void; otherwise it shall remain in full force and virtue.

IN WITNESS WHEREOF, the **Principal** and **Surety** have hereunto set their hands and seals this:

_____ Day of _____ 20_____.

PRINCIPAL _____

By: _____

Seal

Attest: _____

SURETY _____

By: _____

Attorney-in Fact

Attest: _____

Surety Agent

Surety Agent Address

Surety Agent Phone Number

The rate for this bond is _____% for the first \$ _____

and _____% for the next \$ _____.

The total premium for this bond is \$ _____.

Section 00.72.00
GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION
MGL c.149 \$150,000 - \$10 Million

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Section 00.72.00
GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION
MGL c.149 \$150,000 - \$10 MILLION
ARTICLE 1
GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of the Owner-Contractor Agreement, Advertisement, Instructions to Bidders, Bidding Documents, Contract Forms, Conditions of the Contract, Specifications, Drawings, DHCD publication known as the Construction Handbook, all addenda issued prior to execution of the Contract, and other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Prime Designer.

1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification.

1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner or by separate contractors.

1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards, and workmanship for the Work, and performance of related services.

1.1.7 THE CONSTRUCTION HANDBOOK

The Construction Handbook is published by and available free of charge, from the Department. It outlines the procedures that the Contractor, Owner, Prime Designer, and Department shall follow during the construction of the Work. The most recent version, at the time of bid opening, of the Construction Handbook is incorporated by reference into the Contract Documents.

1.2 EXECUTION, CORRELATION, AND INTENT

1.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

1.2.2 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is

required by one shall be as binding as if required by all. Performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results. In case of inconsistent requirements in the Contract Documents, the requirement for the greater quantity or higher quality shall take precedence and shall be the Contract requirement.

1.2.3. Unless otherwise stated in the Contract Documents, words which have well known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.2.4. Where reference is made to standards or trade association publications, it shall be considered to refer to the latest edition and revision thereof, if any, in effect on the date the Contract Documents were advertised for bid.

1.3 USE OF DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS

The Drawings, Specifications and other documents prepared by the Prime Designer, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor, or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, the Prime Designer, and the Department.

ARTICLE 2 OWNER

2.1 DEFINITION

The term "Owner", sometimes also referred to as the "Awarding Authority" or "Authority", means the Housing Authority identified in the Owner-Contractor Agreement, organized and existing under the provisions of M.G.L. c.121B.

2.2 INFORMATION AND SERVICES TO BE PROVIDED BY THE OWNER

2.2.1 The Owner will furnish to the Contractor, free of charge, a reasonable number of copies of the Contract Documents for the execution of the Work, including a set for record purposes. In addition, the Owner, through the Prime Designer, will furnish to the Contractor a reproducible transparency and one black line print of detail and clarification drawings issued after the Contract has been awarded. The Contractor shall provide and distribute such number of prints of these transparencies as required for the Contractor's and Subcontractors' use.

2.2.2 The Owner shall furnish available surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site.

2.3 OWNER'S RIGHT TO STOP THE WORK

2.3.1 If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents or persistently fails to carry out the Work in accordance with the Contract Documents, the Owner by written order signed personally or by its authorized agent, may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated.

2.3.2 Stop work orders require the Administrators' prior approval. (See Subparagraph 3.1.2)

2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

2.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Prime Designer at the Owner's direction to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies, hire one or more contractors to correct such deficiencies.

2.4.2 In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Prime Designer's additional services and expenses made necessary by such default, neglect, or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 DEPARTMENT

3.1 DEFINITIONS

3.1.1 The term "Department" means the Massachusetts Department of Housing and Community Development, 100 Cambridge Street, Suite 300, Boston, MA 02114.

3.1.2 The term "Administrator" means the person appointed by the Department to administer the terms of the Contract for Financial Assistance between the Owner and the Department, who is also empowered to take certain actions under this Agreement. Contractor should address mail to the Administrator c/o the Construction Management Unit.

3.1.3 The term "Construction Advisor" means the person designated by the Administrator to assist the Administrator. The duties, responsibilities and limitations of the Construction Advisor's authority are described in the Construction Handbook.

3.2 PROJECT FUNDING

The Work under this Contract is funded by the Commonwealth of Massachusetts through the Department pursuant to a contract for financial assistance between the Department and the Owner.

3.3 DEPARTMENT'S RESPONSIBILITIES

3.3.1 The Contractor is advised that various actions taken or decisions made by the Owner and/or the Prime Designer under this Contract, require the prior approval and counter-signature of the Administrator. Those actions or decisions include, but are not limited to, the following:

- .1 Approval, substitutions, and final selection of Sub-Bidders pursuant to M.G.L. c.149 §44F
- .2 Change Orders and Construction Change Directives, whether or not they affect a change in the Contract Sum or in the Contract Time.
- .3 Written orders, notices, and approvals given by the Owner pursuant to the Contract Documents or pursuant to any Laws applicable to this Contract, including approval of the Contractor's payment requests.
- .4 Approval of "or equal" submissions and substitutions pursuant to Subparagraph 4.6.3.
- .5 Stop Work order.
- .6 Certificate of Substantial Completion.
- .7 Final payment.
- .8 Termination of Contract.

3.3.2 In any instance where the Contractor requires clarification as to whose approval is required, the Prime Designer shall provide such clarification.

3.3.3 Work undertaken by the Contractor or a Subcontractor at the Owner's or other person's order without the Administrator's countersignature prior to the start of such work shall be considered unauthorized work and shall not be considered cause for extra payment. The Contractor or Subcontractor shall be responsible for performing, at their own expense, corrective measures required by the Prime Designer due to any failure to obtain the prior approval of the Administrator pursuant to Subparagraph 3.3.1.

3.3.4 The Department and its authorized representatives and agents shall at all times have access to, and be permitted to observe and review all Work, materials, payrolls, records of personnel, conditions of

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

employment, invoices of materials, and other relevant data and records maintained by the Contractor on the Project.

ARTICLE 4 CONTRACTOR

4.1 DEFINITION

The Contractor, sometimes referred to as the General Contractor, is the person or entity identified as such throughout the Contract Documents as if singular in number. The term Contractor means the Contractor or its authorized representative.

4.2 REVIEW OF CONTRACT DOCUMENTS & FIELD CONDITIONS BY CONTRACTOR

4.2.1 The Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the Owner pursuant to Subparagraph 2.2.2 and shall at once report to the Prime Designer errors, inconsistencies, or omissions discovered. The Contractor shall not be liable to the Owner or Prime Designer for damage resulting from errors, inconsistencies, or omissions in the Contract Documents unless the Contractor recognized such error, inconsistency, or omission and knowingly failed to notify the Prime Designer. If the Contractor performs any construction activity knowing it involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Prime Designer, the Contractor shall assume responsibility for such performance and shall bear the attributable costs for correction.

4.2.2 The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies, or omissions discovered shall be reported to the Prime Designer at once.

4.2.3 The Contractor shall perform the Work in accordance with the Contract Documents and submittals approved pursuant to Paragraph 4.7.

4.3 SUPERVISION AND CONSTRUCTION PROCEDURES, COORDINATION, AND CUTTING AND PATCHING

4.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures, and for coordinating all portions of the Work under the Contract.

4.3.2 The Contractor shall be responsible for the proper fitting of all Work and the coordination of the operations of all trades, Subcontractors, or material men engaged upon the Work.

4.3.3 All necessary cutting, coring, drilling, grouting, and patching required to fit together the several parts of the Work shall be done by the Contractor, except as may be specifically noted otherwise under any particular filed sub-bid section of the Specifications.

4.3.4 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors, and their agents and employees, and other persons performing portions of the Work.

4.3.5 The Contractor shall be responsible for inspection of portions of Work already performed under this Contract to determine that such portions are in proper condition to receive subsequent Work.

4.3.6 The Contractor shall do engineering required for establishing grades, lines, levels, dimensions, layouts, and reference points for the trades; shall be responsible for maintaining bench marks and other survey marks; and shall replace any bench marks or survey marks which have been disturbed or destroyed.

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

4.3.7 Unless otherwise required by the Contract Documents, or directed in writing by the Prime Designer, Work shall be done during regular working hours. However, if the Contractor desires to carry on the Work outside of regular working hours or on Saturdays, Sundays, or Massachusetts holidays it shall allow ample time to enable satisfactory arrangements to be made for inspecting Work in progress and shall bear the costs of such inspection. The Owner shall bill the Contractor directly for such costs.

4.3.8 Work done outside of regular working hours without the consent or knowledge of the Prime Designer shall be subject to additional inspection and testing as directed by the Prime Designer. The cost of this inspection and testing shall be paid by the Contractor whether the Work is found to be acceptable or not.

4.4 SUPERINTENDENT

4.4.1 The Contractor shall employ a Superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The Superintendent shall represent the Contractor, and communications given to the Superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case. The Superintendent shall attend each job meeting.

4.4.2 The Superintendent shall be a competent and responsible employee, satisfactory to the Owner, who is regularly employed by the Contractor and is designated by the Contractor as its representative to be in full time attendance at the Project site throughout the construction of the Work. The Superintendent shall be responsible for coordinating all the Work of the Contractor and the Subcontractors. The Superintendent shall be licensed consistent with the Massachusetts Building Code. The Superintendent's resume shall be submitted to the Owner prior to commencement of construction and must demonstrate to the Owner's reasonable satisfaction that the Superintendent has performed similar duties on previous construction projects similar to the Project.

4.5 LABOR

The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them, and whenever the Owner shall notify the Contractor, in writing, that any worker is, in its opinion, incompetent, unfaithful, disorderly, or otherwise unsatisfactory, such employee shall be discharged from the Work and shall not again be employed on the Project except with the consent of the Owner.

4.6 MATERIALS AND EQUIPMENT

4.6.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

4.6.2 Materials and Equipment to be installed as part of the Contract (both or either of which are hereinafter referred to as "Materials") shall be new, unused, of recent manufacture, assembled, and used in accordance with the best construction practices.

4.6.3 "OR EQUAL" SUBMISSIONS/SUBSTITUTIONS

4.6.3.1 Except where a product has been specified as a proprietary material, the words "or equal" are understood to follow the name of any maker, vendor, or product specified to be used in the Contract Documents. To determine if the materials or articles proposed by the Contractor are equal to those specified, the Prime Designer, with the concurrence of the Department, shall determine whether the materials or articles proposed are at least equal in quality, durability, appearance, strength and design to the material or articles named or described, and will perform at least equally the functions imposed by the design. See M.G.L. c.30 §39M.

4.6.3.2 The Contractor shall be responsible for providing the Prime Designer with any information and test results the Prime Designer reasonably requires to determine if a material is equal to a material named or described in the Contract Documents.

4.6.3.3 Whenever the Contractor submits a material for approval as a substitute for a material named or described in the Contract Documents, such submission shall be made at least one hundred and twenty (120) days prior to the date the materials will be used on the Project but in no event later than ninety (90) days after the award of the Contract. In no event shall the Contractor maintain a claim for delays based upon the Prime Designer's review of such substituted materials if the Contractor has failed to comply with the one hundred and twenty (120) days submission requirement.

4.7 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

4.7.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate a portion of the Work.

4.7.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor or its Subcontractors and suppliers to illustrate materials or equipment for some portion of the Work.

4.7.3 Samples are physical examples which illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged.

4.7.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. The purpose of their submission is to demonstrate for those portions of the Work for which submittals are required the way the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review by the Prime Designer is subject to the limitations of Subparagraph 4.7.9.

4.7.5 The Contractor shall review, approve, and submit to the Prime Designer Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals made by the Contractor which are not required by the Contract Documents may be returned without action. The Contractor's attention is directed to the provisions of Subparagraph 4.6.3 entitled "Or Equal" Submissions/Substitutions and Section 01.25.13 of the Specifications.

4.7.6 The Contractor shall prepare and keep current, for the Prime Designer's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule submitted pursuant to Paragraph 9.4, and allows the Prime Designer reasonable time to review submittals.

4.7.7 The Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Prime Designer. Such Work shall be in accordance with approved submittals.

4.7.8 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements, and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

4.7.9 The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Prime Designer's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Prime Designer in writing of such deviation at the time of submittal and the Department has given explicit written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals by the Prime Designer's actions.

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

4.7.10 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Prime Designer on previous submittals.

4.7.11 Informational submittals upon which the Prime Designer is not expected to take responsive action may be so identified in the Contract Documents.

4.7.12 When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the Prime Designer shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

4.8 SAMPLES AND TESTS

4.8.1 Materials to be used in the Work may be tested or inspected after reasonable notice by the Prime Designer and may be rejected if they fail the specified tests. Except as otherwise provided in the Contract, all testing of material specifically requested by the Prime Designer will be paid for by the Owner, except that the cost of testing of materials that fail the testing criteria shall be borne by the Contractor. If the Contractor requests permission to use a material that was not specified in the Contract Documents and the Prime Designer requires testing of such material before approving its use, the Contractor shall pay for such testing.

4.8.2 The source of material proposed by the Contractor shall be designated in time to permit all required testing and inspection before the material is needed for incorporation into the Work. The Contractor shall have no claim for delays due to testing if it fails to designate the proposed source or to order the material in time to provide for adequate testing and inspection. Necessary arrangements shall be made to permit the Prime Designer to make factory, shop, or other inspection of materials or equipment ordered for the Work, in process of manufacture or fabrication, or in storage elsewhere than the site of the Work.

4.8.3 The Contractor shall furnish the Prime Designer with samples of the materials it proposes to use in the execution of the work in sufficient time to afford the Prime Designer the opportunity to adequately review and, if necessary, arrange for testing of such materials.

4.9 DELIVERY AND STORAGE OF MATERIALS

4.9.1 Materials and equipment shall be progressively delivered to the site so that there will be neither delay in the progress of the Work nor an undue accumulation of materials that are not to be used within a reasonable time.

4.9.2 Materials stored off-site shall be stored at the expense of the Contractor in a manner that preserves their quality and fitness for the Work. Material shall be placed on wooden platforms or other hard clean surfaces and not on the ground and shall be properly protected.

4.9.3 If the Contractor requests the Prime Designer's inspection of materials stored off-site, the Contractor shall assume the Prime Designer's reasonable costs for travel, room, and meals associated with such inspection.

4.9.4 Materials stored either at the site or at some other location agreed upon in writing shall be located so as to facilitate prompt inspection and may again be inspected prior to their use in the work.

4.9.5 The Contractor shall take charge of and be liable for any loss of or injury to the materials delivered at or in the vicinity of the place where the Work is being done and shall notify the Prime Designer as soon as any such materials are so delivered and allow them to be examined by the Prime Designer.

4.9.6 Payment for stored materials shall be made in accordance with Paragraph 10.4.

4.10 WARRANTY

The Contractor warrants to the Owner and Prime Designer that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and

that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the Prime Designer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

4.11 REJECTION OF DEFECTIVE MATERIALS

The Prime Designer may reject materials if the Prime Designer reasonably determines that such materials do not conform to the Contract Documents. No rejected materials, the defects of which have been subsequently corrected, shall be used in the Work except with the written permission of the Prime Designer. No extra time shall be allowed for completion of the Work due to the rejection of non-conforming materials.

4.12 REJECTION OF DEFECTIVE WORK

The Prime Designer's inspection of the Work shall not relieve the Contractor of any of its responsibilities to fulfill the Contract obligations, and defective work shall be corrected. Unsuitable work may be rejected by the Prime Designer, notwithstanding that such work and materials have been previously overlooked or misjudged by the Prime Designer and accepted for payment. If the Work or any part thereof shall be found defective at any time before the final acceptance of the whole Work, the Contractor shall forthwith correct such defect in a manner satisfactory to the Prime Designer, and if any material brought upon the site for use in the Work, or selected for the same, shall be rejected by the Prime Designer as unsuitable or not in conformity with the Contract requirements, the Contractor shall forthwith remove such materials from the vicinity of the Work.

4.13 MATERIALS ATTACHED OR AFFIXED TO THE WORK

Nothing in this Contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been attached or affixed to the Work or the soil; but all such materials shall, upon being so attached or affixed, become the property of the Owner.

4.14 SALES TAX EXEMPTION AND OTHER TAXES

4.14.1 To the extent that materials and supplies are used or incorporated in the performance of this Contract, the Contractor is considered an exempt purchaser under the Massachusetts Sales Act, Chapter 14 of the Acts of 1966.

4.14.2 The Contractor shall be responsible for paying all other taxes and tariffs of any sort, related to the work.

4.15 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the use and information of the Owner, one record copy of the Drawings, Specifications, Addenda, Change Orders, and other Contract Modifications, in good order and marked currently to record changes and selections made during construction, and in addition approved Shop Drawings, Product Data, Samples, updated construction schedule, and similar required submittals. These shall be available to the Prime Designer and shall be delivered to the Prime Designer for submittal to the Owner upon completion of the Work.

4.16 PERMITS, FEES, AND NOTICES

4.16.1 The Contractor (and the appropriate licensed subcontractor when applicable) shall secure and the Owner shall pay for any and all permits. The Contractor (and licensed subcontractor when applicable) shall secure and pay for all licenses, and other fees required for the proper execution of the Work. The Contractor shall coordinate all efforts required to obtain these permits including having the permit issued in the name of the Contractor or appropriate subcontractor.

4.16.2 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities bearing on performance of the Work.

4.16.3 It is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if the

Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the Prime Designer and Owner in writing, and necessary changes shall be accomplished by appropriate Modification.

4.16.4 If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes and rules and regulations without such notice to the Prime Designer and Owner, the Contractor shall assume full responsibility for such Work and shall bear the attributable costs.

4.17 DEBRIS, CHEMICAL WASTE

4.17.1 The Contractor shall not permit the accumulation of debris, both exterior and interior, and the work area shall at all times be kept satisfactorily clean.

4.17.2 The Contractor shall remove debris from the site of the work and legally dispose of it at any private or public dump that the Contractor may choose. The Contractor shall make all arrangements and obtain any approvals necessary for said disposal from the owners or officials in charge of such dumps and shall bear all cost, including fees resulting from such disposal. Garbage shall be removed daily.

4.17.3 No open fire shall be permitted on site.

4.17.4 Chemical Waste: Chemical waste shall be stored in corrosion resistant containers, removed from the Project site, and disposed of not less frequently than monthly unless directed otherwise. Disposal of chemical waste shall be in accordance with requirements of the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP). Fueling and lubricating of vehicles and equipment shall be conducted in a manner that affords the maximum protection against spills and evaporation. Lubricants to be discarded or burned shall be disposed of in accordance with approved procedures meeting all applicable Federal, State and local regulations. In the event of an oil or hazardous materials spill large enough to violate Federal, State or applicable local regulations, the Prime Designer shall be notified immediately. The Contractor shall be responsible for immediately cleaning up any oil or hazardous waste spills resulting from its operations. Any costs incurred in cleaning up any such spills shall be borne by the Contractor.

4.18 SITE AND WEATHER PROTECTION

4.18.1 The Contractor shall take precaution during the execution of work involving demolition not to disturb or damage any existing structures, landscaping, walks, roads, or other items scheduled to remain. The Contractor shall restore any damaged items to original condition and as directed by the Prime Designer. The Contractor shall provide and erect acceptable barricades, fences, signs, and other traffic devices to protect the work from traffic and the public as reasonably necessary and as required by the Massachusetts Building Code.

4.18.2 The Contractor shall install weather protection and provide adequate heat in the protected area from November 1 to March 31 as required by M.G.L. c.149 §44G.

4.19 ARCHAEOLOGICAL AND HISTORICAL RESOURCES

All items having any apparent historical or archaeological interest which are discovered in the course of any construction activities shall be carefully preserved and reported immediately to the Prime Designer for determination of appropriate actions to be taken.

4.20 SAFETY REQUIREMENTS

4.20.1 The Contractor must comply with all Federal, State, and Local safety laws and regulations of the applicable to work performed under this Contract.

4.20.2 If the Contractor uses or stores toxic or hazardous substances it is subject to M.G.L. c.111F §2, the "Right to Know" law and regulations promulgated by the Department of Public Health, 105 CMR 670, the Department of Environmental Protection, 310 CMR 33, and the Department of Labor and Workforce Development, 441 CMR 21; and must post a Workplace Notice obtainable from the Department of Labor and Workforce Development.

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4.20.3 The Contractor must comply with Dig-Safe Laws. Dig-Safe is the Utility Underground Plant Damage Prevention System, 331 Montvale Ave., Woburn, MA 01801, 1.888.344.7233. The Contractor must notify Dig-Safe of contemplated excavation, demolition, or explosive work in public or private ways, and in any utility company right of way or easement, by certified mail, with a copy to Department of Environmental Protection (DEP). This notice must be given at least 72 hours prior to the work, but not more than sixty days before the work is to be done. Such notice shall state the name of the street or the route number of the way and an accurate description of the location and nature of the proposed work. Dig-Safe is required to respond to the notice within 72 hours of receipt by designating the location of pipes, mains, wires or conduits at the site. The Contractor shall not commence work until Dig-Safe has responded. The work shall be performed in such manner and with reasonable precautions taken to avoid damage to utilities under the surface at the work location. The Contractor shall provide the Superintendent with current Dig-Safe regulations, and a copy of M.G.L. c.82 §40. Any costs related to the services performed by Dig-Safe shall be borne by the Contractor.

4.20.4 This project is subject to compliance with Public Law 92-596 "Occupational Safety and Health Act of 1970" (OSHA), with respect to all rules and regulations pertaining to construction, U.S. Code Title 29, sections 651 et seq. including Volume 36, numbers 75 and 105, of the Federal Register as amended, and as published by the U.S. Department of Labor.

4.20.5 If this Project requires the containment or removal of asbestos or material containing asbestos, lead or waste containing lead based paint, the Contractor shall ensure that the person or company performing the asbestos or lead related services is licensed pursuant to applicable State laws and regulations.

4.21 ACCESS TO WORK

The Contractor shall provide the Owner and Prime Designer access to the Work at all times and shall cooperate with the Owner whenever the Owner invites visitors to the site.

ARTICLE 5 ADMINISTRATION OF THE CONTRACT

5.1 PRIME DESIGNER

The Prime Designer is the person or entity licensed to practice architecture or engineering, who is responsible for performing the duties assigned to the Prime Designer by the Contract Documents.

5.2 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall communicate through the Prime Designer. Communications by and with the Prime Designer's consultants shall be through the Prime Designer. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

5.3 PRIME DESIGNER'S ADMINISTRATION OF THE CONTRACT

5.3.1 The Prime Designer will provide administration of the Contract as described in the Contract Documents, and will be the Owner's representative (1) during construction, (2) until final payment is due and (3) with the Owner's concurrence, from time to time during the guaranty period described in Article 11. The Prime Designer will advise and consult with the Owner.

5.3.2 The Prime Designer will regularly visit the site, conduct job meetings and keep the Owner informed of the progress and quality of the Work, and will endeavor to guard the Owner against defects and deficiencies in the Work. The Prime Designer's minutes of meetings shall be the official minutes kept on the Project.

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5.3.3 Based on the Prime Designer's observations and evaluations of the Contractor's Applications for Payment, the Prime Designer will review and certify the amounts due the Contractor and will submit to the Owner and the Department for their consideration Certificates for Payment in such amounts as the Prime Designer determines appropriate.

5.3.4 The Prime Designer shall reject Work which does not conform to the Contract Documents. Whenever the Prime Designer considers it necessary or advisable to achieve the intent of the Contract Documents, the Prime Designer will have authority to require additional inspection or testing of the Work in accordance with Paragraph 4.8.

5.3.5 The Prime Designer will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking such submittals for conformance with the information given and the design concept expressed in the Contract Documents. This review shall be in accordance with the provisions of Subparagraph 4.6.3 and the procedures described in Section 01.33.00 of the Specifications, and shall not relieve the Contractor from compliance with the requirements of the Contract Documents.

5.3.6 The Prime Designer will prepare Change Orders and Construction Change Directives, and may authorize Minor Changes in the Work as provided in Paragraph 8.1.

5.3.7 The Prime Designer will conduct inspections to determine the date or dates of Substantial Completion and the date of Final Completion, will receive and forward to the Owner for the Owner's review and records written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.

5.3.8 If the Owner, Prime Designer, and Department agree, the Owner may provide one or more project representatives to assist in carrying out the Prime Designer's responsibilities at the site. The duties, responsibilities, and limitations of authority of such project representatives shall be as described in the Construction Handbook and explained at the pre-construction conference.

5.3.9 The Prime Designer will interpret and decide matters concerning performance under and requirements of the Contract Documents on written request of either the Owner or Contractor. The Prime Designer's written response to such requests will be made within the thirty day time limit prescribed in Paragraph 8.6.3.

5.3.10 The Prime Designer's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

5.4 PROCEDURES AND PRACTICES

The Department's procedures, forms, and practices which must be employed on the Project are described in the Construction Handbook, and will be explained at the pre-construction conference.

5.5 PRECONSTRUCTION CONFERENCE

Prior to commencement of the Work, the Contractor shall meet in conference with representatives of the Owner, Department, and Prime Designer to discuss and develop mutual understandings relative to administration of the quality assurance program, safety program, labor provisions, the schedule of work, and other Contract procedures.

ARTICLE 6 SUBCONTRACTORS

6.1 DEFINITION

6.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the work at the site.

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6.1.2 The Contractor shall require each Subcontractor to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor assumes toward the Owner and the Prime Designer.

6.1.3 Subcontracts between the Contractor and a filed sub-bidder shall be in the form required by M.G.L. c.149 §44F.

6.2 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner provided that:

6.2.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Paragraph 19.1 and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor in writing; and

6.2.2 assignment is subject to the prior rights of the surety obligated under bond relating to the Contract.

ARTICLE 7 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

7.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

7.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such claim as provided elsewhere in the Contract Documents.

7.1.2 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing and coordinating their construction schedules with one another when directed to do so.

7.2 MUTUAL RESPONSIBILITY

7.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

7.2.2 If part of the Contractor's Work depends on proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Prime Designer apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor to so report shall constitute an acknowledgment that the Owner's or separate contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

7.2.3 The Contractor shall promptly remedy damage wrongfully caused by the Contractor to completed or partially completed construction or to property of the Owner or separate contractors.

ARTICLE 8 CHANGES IN THE WORK

8.1 CHANGES - DEFINITIONS

8.1.1 All changes in the work, including any increase, decrease, or other equitable adjustment in the Contract Sum or in the time for performing the Contract, shall be authorized in the form of one, or a combination of, the following written instruments: Change Order, Construction Change Directive, or a

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Minor Change in the Work. The term "equitable adjustment" as used in this paragraph shall include all adjustments to the Contract Sum or time to which the Contractor is entitled pursuant to M.G.L. c.30 §§39N and 39O and such equitable adjustment shall be made in accordance with the provisions of this Article.

8.1.2 A Minor Change is a written order binding on the Owner and Contractor issued by the Prime Designer, with the concurrence of the Construction Advisor, not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. The Contractor shall carry out such written orders promptly.

8.1.3 A Change Order is a written instrument prepared by the Prime Designer and signed by the Owner, Department, Contractor, and Prime Designer, stating their agreement regarding a change in the work, including a change in the Contract Sum or Contract Time.

8.1.4 A Construction Change Directive is a written order prepared by the Prime Designer and signed by the Owner, Prime Designer, and Department, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum, or Contract Time, or both. The Owner may, by Construction Change Directive, and without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

8.1.5 A Change Order shall be based upon agreement among the Owner, Contractor, Prime Designer, and Department; a Construction Change Directive requires agreement by the Owner, Prime Designer, and the Department, and may or may not be agreed to by the Contractor; an order for a Minor Change in the Work may be issued by the Prime Designer with the concurrence of the Construction Advisor.

8.1.6 Change Orders and Construction Change Directives must be counter-signed by the Administrator in accordance with Subparagraph 3.3.1, to be effective.

8.2 REQUEST FOR A CHANGE IN THE WORK

A change order request shall be in writing and may originate with the Owner, the Department, the Prime Designer, or the Contractor. If such a request would cause a change in the Contract Sum, the Contractor shall promptly submit to the Prime Designer its cost and pricing data for such proposed change. Such data shall be accurate, current and complete at the time of submission and shall be computed in accordance with Subparagraph 8.3.1.

8.3 METHOD FOR DETERMINING AMOUNT OF CHANGE

8.3.1 Changes in the Contract Sum shall be calculated in accordance with one or a combination of the following methods, as determined by the Prime Designer:

- .1** Lump sum basis, provided the lump sum amount shall include the estimated cost of the change, broken down by Items **a** through **i** in the following Subparagraph **.3**.
- .2** Unit price basis, to be adjusted in accordance with contract unit prices, or other agreed upon unit prices provided that the unit prices shall be inclusive of all costs related to such equitable adjustment.
- .3** Time and materials basis, on a not-to-exceed predetermined upset amount determined by the Prime Designer, to be subsequently adjusted on the basis of the Contractor's actual costs based on the following items **a** through **i**:
 - a.** Cost of labor at the rates found elsewhere in this document, including foremen;
 - b.** Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
 - c.** Rental cost of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others.
 - d.** A percent of the net increase or decrease of Item **a** to cover Worker's Compensation, F.I.C.A., and unemployment contributions.
 - e.** The percentage for Worker's Compensation in Item **d** above shall not exceed the standard manual rate for the involved trade, as set by the Worker's Compensation Rating and Inspection

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Bureau of Massachusetts. This rate shall not include any surcharges such as experience modifications and all risk factor adjustment programs, etc.

- f. For work performed by the Contractor's own forces, there shall be added an amount of 15% of items **a - d** for overhead, superintendence, and profit.
- g. For work performed by any Subcontractor, there shall be added an amount of 15% of the Subcontractor's costs for Items **a - d** for the Subcontractor's overhead, superintendence and profit. The Contractor shall be entitled to an additional 10% mark-up on the total amount of the Subcontractor's price as compensation for assuming full responsibility and supervision for the Subcontractor's work.
- h. Actual increases in the premium costs for performance and payment bonds required of the Contractor and filed Subcontractors, provided there will be an appropriate credit for reduced premiums for a credit change order.
- i. On any change in the Contract Sum that involves a credit, the amount of the credit will not include an overhead and profit factor, however, the credit will include an amount for item **d**, which shall not be less than 25% of item **a**.

8.3.2 The method provided in Subparagraph 8.3.1, for compensating the Contractor and Subcontractors for changes in the Work, shall be considered to adequately compensate the Contractor and Subcontractors for any and all costs directly, indirectly, or consequentially related to, or caused by, such change in the work.

8.4 WORK PERFORMED UNDER PROTEST

The Contractor shall perform all work as directed by the Prime Designer, and if the Prime Designer determines that certain work for which the Contractor has requested a change order does not represent a change in the Contract, or if the Contractor and the Prime Designer cannot agree to the amount of compensation for a change order, the Contractor shall perform said work under protest and must follow the notice requirements and maintain the records required by Subparagraph 8.7.3.

8.5 STATUTORY CHANGE ORDER PROVISIONS

The Contractor's attention is directed to the Massachusetts General Laws Chapter 30, §§ 39I, 39J, 39N, 39O and 39P, the provisions of which apply to this Contract.

8.6 DIFFERING SITE CONDITIONS, M.G.L. c.30 §39N

8.6.1 If, during the progress of the Work, the Contractor or the Owner discovers that the actual subsurface or latent physical conditions encountered at the site differ substantially or materially from those shown on the plans or indicated in the Contract Documents, either the Contractor or the Owner may request an appropriate time extension and an equitable adjustment in the Contract Sum applying to work affected by the differing site conditions. A request for such an adjustment shall be in writing and shall be delivered by the party making such claim to the other party as soon as possible after such conditions are discovered.

8.6.2 Upon receipt of such a claim from a Contractor, or upon its own initiative, the Owner shall make an investigation of such physical conditions, and, if they differ substantially or materially from those shown on the plans or indicated in the Contract Documents or from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the plans and Contract Documents and are of such nature as to cause an increase or decrease in the cost of performance of the work or a change in the construction methods required for the performance of the work which results in an increase or decrease in the cost of the work, the Owner shall upon submission by the Contractor of a properly submitted Change Order request, make an equitable adjustment in the Contract Sum and the Contract shall be modified in writing accordingly.

8.6.3 TIMELY DECISION BY OWNER. M.G.L. c.30 §39P

Whenever this Contract requires the Owner or its Prime Designer to make a decision during construction of the Project, on interpretation of the specifications, approval of equipment, material or any other approval, or progress of the work, that decision shall be made promptly and, in any event, no later than thirty days after receipt of a written submission for such decision by the Contractor; but if such decision

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requires extended investigation and study, the Owner or the Prime Designer shall, within thirty (30) days after the receipt of the submission, give the Contractor written notice of the reasons why the decision cannot be made within the thirty day period and the date by which the decision will be made.

8.7 CLAIMS

8.7.1 If the Contractor has any claim or dispute of any nature arising under this Contract, including a claim based on the Owner's failure or refusal to approve a change order request of the Contractor, in full or in part, the Contractor shall submit such claim or dispute to the Prime Designer, in the form of a change order request, for initial review and consideration, subject to further appeal to the Administrator. If the Contractor is not satisfied with the Prime Designer's decision or, if the Prime Designer fails to render a decision within thirty (30) days after receiving written notice of such claim or dispute from the Contractor, the Contractor may file a written request for a decision with the Department pursuant to Subparagraph 8.7.2.

8.7.2 Appeal of an Prime Designer's decision under Subparagraph 8.7.1 must be made directly to the Administrator by certified mail, copy to the Prime Designer and Owner, within twenty-one (21) calendar days after the date on which the party making the appeal receives the Prime Designer's written decision or within twenty-one (21) days after the thirty (30) day non-decision period noted in 8.7.1. Failure to appeal within this period will result in the Prime Designer's decision becoming final and binding upon the Owner and the Contractor.

8.7.3 Pending resolution of the claim or dispute, the Contractor must proceed with the disputed Work, as directed by the Prime Designer. The Contractor must give written notice to the Department and the Prime Designer stating that it is proceeding with the disputed work under protest. Accurate records of the nature and extent of the disputed Work and of the time spent and equipment used on the disputed Work shall be maintained by the superintendent and verified daily by the Project Representative or the Owner's designee. Failure of the Contractor to maintain such records shall cause the Contractor to forfeit its claim to additional compensation for such disputed work.

8.7.4 Meetings or administrative conferences held by the Department to review the basis of the claim or dispute are conducted in accordance with the procedure described in the Construction Handbook. Such conferences are not subject to the State Administrative Procedures Act.

8.7.5 At the conclusion of these proceedings, the Department shall issue a decision which shall be final under the Contract. The matter may then be appealed to a court of competent jurisdiction.

8.7.6 Requests for administrative conferences by subcontractors must be made by the Contractor; subcontractors cannot make such requests directly.

ARTICLE 9 TIME, SCHEDULES, AND COMPLETION

9.1 DEFINITIONS

9.1.1 Unless otherwise provided, Contract Time is the period of time, as extended by approved Change Order, allotted in the Contract Documents for Substantial Completion of the Work.

9.1.2 The date of commencement of the Work is the date established in the Notice to Proceed from the Owner. The commencement date shall not be postponed by the failure to act by the Contractor or by persons or entities for whom the Contractor is responsible.

9.1.3 The date of Substantial Completion is the date certified by the Prime Designer in accordance with Subparagraph 9.6.7.

9.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

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9.2. PROGRESS AND COMPLETION

9.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Contract the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

9.2.2 The Contractor shall proceed expeditiously with adequate forces and shall achieve Completion within the Contract Time.

9.3 DELAYS AND EXTENSIONS OF TIME

9.3.1 The Contractor shall be entitled to an extension of time for completion of the Work because of;

- .1 acts of God;
- .2 labor disputes;
- .3 abnormal weather conditions; or
- .4 acts of neglect of the Owner, Prime Designer, or Department as described in Subparagraph 8.6.3.

9.3.1.5 Except in unusual circumstances, delays caused by suppliers, Subcontractors and sub-subcontractors shall be considered to be within the control of the Contractor.

9.3.1.6 Should the Contractor require additional time to complete the Work, the Contractor shall document the reasons therefore and request an extension of time at the time the alleged delay occurs, as provided in this Article and Article 8.

9.3.1.7 Failure to notify the Prime Designer of any delay as provided in this Article shall preclude the Contractor from subsequently claiming any damages due to said delay.

9.3.1.8 Requests for extensions of time shall be submitted as a change order request to the Prime Designer under Article 8 for the Owner's consideration.

9.3.2 CONTRACTOR'S LIABILITY FOR DELAYS

The Contractor shall be liable for, and shall pay, to the Owner, all of the Owner's Project related costs incurred after the time stipulated for Substantial Completion, as extended by Change Order. Such costs shall include: fees paid to the Prime Designer as extra services for inspection services and administration of the Contract, at the rate stipulated in the Contract for Architectural/Engineering Services between the Owner and the Prime Designer; the costs of the Project Representative at the current salary rate; lost rental income based on the average rent collected by the Owner, and/or increased rental subsidies and any other direct expenses. The Owner may retain from moneys otherwise due the Contractor whatever sums accrue to the Owner pursuant to this provision. The Contractor shall not be liable for costs for delay in performance for any period for which an extension of the Contract Time has been granted pursuant to the provisions of Subparagraph 9.3.

9.3.3 OWNER DELAYS

9.3.3.1 The Owner may delay the commencement of the Work, or any part thereof, due to unforeseen circumstances or conditions which have a bearing on the Work required under this Contract or for any other reason if it is deemed to be in the best interest of the Owner to do so. Except as expressly provided in the following Subparagraphs 9.3.3.2, 9.3.3.3, and 9.3.3.4, the Contractor shall have no claim for additional compensation on account of such delay, but shall be entitled to an extension of Contract Time as determined reasonable by the Prime Designer.

9.3.3.2 The Contractor and the Owner agree that the following Subparagraphs provide the Contractor with the right to request additional compensation for Owner caused delays only in the following two circumstances:

- .1 When the Owner provides the Contractor with a written order to suspend or delay the Work, or a portion thereof, for a period of fifteen days or more.
- .2 When the Owner or its Prime Designer fails to make a decision within the thirty day period described in Subparagraph 8.6.3 and such failure delays the Work, or a portion thereof, for fifteen days or more.

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9.3.3.3 The Owner may, for its convenience, order the Contractor in writing to suspend, delay, or interrupt all or any part of the Work for such period of time as it may determine appropriate, provided however, that if there is a suspension, delay, or interruption for fifteen (15) days or more, or there is a failure of the Owner to act within the time specified in this Contract, the Owner shall make an adjustment in the Contract Sum for any increase in the cost of performance of this Contract, but shall not include any profit to the Contractor on account of such increase; and provided further, that the Owner shall not make any adjustment in the Contract Sum under this provision for any suspension, delay, interruption, or failure to act to the extent that such is due to any cause for which this Contract provides for an equitable adjustment of the Contract Sum under any other Contract provisions. M.G.L. c.30 §390 (a).

9.3.3.4 The Contractor must submit the amount of a claim under Subparagraph 9.3.3.3 to the Owner in writing as soon as practicable after the end of the suspension, delay, interruption, or failure to act and, in any event, not later than the date of final payment under this Contract and except for costs due to a suspension order, the Owner shall not approve any costs in the claim incurred more than twenty days before the Contractor notified the Owner in writing of the act or failure to act involved in the claim. M.G.L. c.30 §390 (b).

9.3.3.5 The Owner and the Contractor agree that the preceding Subparagraph 9.3.3.4 places a burden on the Contractor to inform the Owner, whenever the Contractor considers that an action or inaction of the Owner or its Prime Designer could result or has resulted in a delay in the Project, thereby providing the Owner with the opportunity to take action to avoid or lessen the time extensions or damages that might be associated with such action or inaction.

9.3.3.6 The Contractor must file any claim for additional compensation made pursuant to Subparagraph 9.3.3.4 as a Change Order request. The amount of any such claim shall be calculated only in accordance with the provisions of Subparagraph 8.3.1.3 items a through i, and shall be subject to the provisions of Subparagraph 8.3.2.

9.4 CONSTRUCTION AND PAYMENT SCHEDULES

9.4.1 Prior to commencement of the Work the Contractor shall submit to the Prime Designer a construction schedule in bar graph form, satisfactory to the Prime Designer, showing in detail the proposed progress for the construction of the various parts of the Work, the proposed times for receiving materials required, and the interrelationship between the various construction operations and the percentage of completion and the dollar value of the completed work on the first day of each month for each section of the specifications and the entire Work. Submission of said schedule shall be a condition precedent to approval of the Contractor's first application for payment.

9.4.2 At the end of each month, or more often if required, the Contractor shall furnish the Prime Designer an updated schedule showing actual progress of the various parts of the Work in comparison with the originally proposed progress and payment schedules. If the Prime Designer raises any objections to progress or payment schedules submitted by the Contractor, the Contractor shall immediately address and resolve such objections to the reasonable satisfaction of the Prime Designer.

9.4.3 If the Contractor submits a construction schedule that anticipates Substantial Completion before the date established in the Owner's Notice to Proceed, the Contractor shall have no claim for additional compensation on account of any delays that prevent Substantial Completion before the date set in said Owner's Notice to Proceed.

9.5 USE AND OCCUPANCY

9.5.1 Prior to the date of Substantial Completion of the entire Project stipulated in the Notice to Proceed, the Owner shall have the right, from time to time, to occupy and use any portion of the Project as the Work in connection therewith is substantially completed, provided such use and occupancy does not unduly interfere with the Contractor's operations.

9.5.2 The Prime Designer will, prior to any such use and occupancy, give written notice to the Contractor, indicating the areas intended to be occupied and used, and the intended commencement date of such

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use and occupancy. Occupancy and use shall not commence prior to a time mutually agreed to by the Owner and the Contractor.

9.5.3 Upon receipt of such notice of intent, the Contractor shall promptly secure and submit to the Prime Designer endorsement from the insurance carrier permitting use and occupancy of the Work, or any designated portion thereof, by the Owner prior to Substantial Completion of the entire Project. The Contractor shall be permitted to cancel its special perils insurance for that portion of the Project used and/or occupied by the Owner.

9.5.4 Partial or entire use and occupancy by the Owner shall not constitute an acceptance of Work not completed in accordance with the Contract Documents nor relieve the Contractor from the obligation of performing any Work required by the Contract but not completed at the time of use and occupancy. Before such use and occupancy, the Prime Designer will give the Contractor a list of items to be completed prior to Final Completion occurring in the areas to be occupied.

9.5.5 The Contractor shall be relieved of all maintenance costs of the portion of the Project occupied under the provisions of this Article.

9.5.6 The Contractor shall not be responsible for wear and tear or damage resulting solely from such use and occupancy.

9.5.7 The Contract Sum will be adjusted by mutually acceptable arrangements between the Owner and the Contractor with respect to heat, electricity, and water furnished by the Contractor to the portion of the Work so occupied.

9.5.8 When any portion of the building is in condition to receive fittings, appliances, furniture, or other property to be furnished and installed by the Owner under separate contracts, the Contractor shall allow the Owner to bring such items into the building and shall provide all reasonable facilities and protection therefore.

9.6 SUBSTANTIAL COMPLETION

9.6.1 Substantial Completion is the stage in the progress of the Work when, in the opinion of the Prime Designer, the Work is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use.

9.6.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Prime Designer a comprehensive list of items to be completed or corrected. The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

9.6.3 Upon receipt of the Contractor's list of items to be completed or corrected, the Prime Designer will promptly make a thorough inspection and prepare a "punch list", setting forth in accurate detail any items on the Contractor's list and additional items that are not acceptable or are incomplete.

9.6.4 If, after receipt of the Contractor's list, the Prime Designer determines that the Work is not substantially complete, the Prime Designer shall inform the Contractor of those items that must be completed before the Prime Designer will prepare a punch list. Upon completion of those items, the Contractor shall again request the Prime Designer to prepare the punch list.

9.6.5 When the punch list has been prepared, the Contractor will arrange a meeting with the Prime Designer and Subcontractors to identify and explain all punch list items and address questions on the work which must be done before final acceptance.

9.6.6 The Prime Designer may revise the punch list, from time to time, to ensure that all items of the Work are properly completed.

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9.6.7 The Prime Designer will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate within the provisions of Subparagraph 9.7.2.

9.6.8 Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate and shall be subject to the approval of the Department.

9.7 FINAL COMPLETION

9.7.1 After the Prime Designer has certified that the Work is substantially complete, the Contractor shall immediately proceed to complete all the remaining items of Work as determined by the Prime Designer, including items authorized by Change Orders, Construction Change Directives, or items disputed by the Contractor.

9.7.2 The Contractor shall complete all the remaining items of Work described in Subparagraph 9.7.1, as soon as possible, and in any event within one hundred and twenty days after Substantial Completion, unless the Prime Designer determines that a shorter time period for completion is appropriate, in which event the Contractor must complete the Contract work within such period. The Prime Designer may extend such one hundred and twenty day period if the Prime Designer determines that such extension is justified.

9.7.3 If the Contractor fails to complete the remaining items of Work within the time period provided in Subparagraph 9.7.2, the Owner may arrange for other contractors to complete such items and the direct and indirect costs of such completion shall be charged against the balance due the Contractor or, if no such balance remains, the Contractor shall pay the Owner the costs of such completion.

9.7.4 As an alternative to the procedure described in Subparagraph 9.7.3, the Owner may invoke the performance bond of the Contractor and demand that the surety shall complete the remaining items of work in a timely manner.

9.7.5 The Prime Designer will conduct up to three (3) inspections of completed punchlist items. The Contractor shall be responsible for the costs of additional inspections required to verify successful completion of the punchlist.

ARTICLE 10 PAYMENTS

10.1 CONTRACT SUM

The Contract Sum is stated in the Owner-Contractor Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

10.2 SCHEDULE OF VALUES

10.2.1 Before the first Application for Payment, the Contractor shall submit to the Prime Designer a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Prime Designer may require. This schedule, unless objected to by the Prime Designer, shall be used as a basis for reviewing the Contractor's Applications for Payment.

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10.2.2 The schedule of values shall contain a separate item for each Section of the Specifications broken down in such form as the Prime Designer may require. Each item in the schedule of values shall include its proper share of overhead and profit.

10.3 APPLICATIONS FOR PAYMENT

Once each month, on a date established at the beginning of the Work, the Contractor shall deliver to the Prime Designer by hand or by registered or certified mail with return receipt, an itemized Application for Payment, supported by such data substantiating the Contractor's right to payment as the Prime Designer may require, and reflecting retainage as provided in Subparagraph 10.6.1. Such Application for Payment shall be submitted on a form available from the Department, (a copy can be found in the Construction Handbook). The form shall show separately:

- .1 The value of labor and materials incorporated in the Work.
- .2 The value, kind, and quantity of each item of material or equipment not incorporated in the Work but delivered and suitably stored at the site, during the current pay period.
- .3 The value, kind, and quantity of each item of material or equipment not incorporated in the Work but suitably stored at some other location agreed upon in writing, during the current pay period.
- .4 All Change Orders approved up to the date of the Application for Payment.
- .5 The amounts approved for payment for each item on previous applications.

10.4 PAYMENT FOR STORED MATERIALS

10.4.1 The Contractor shall include in such Application for Payment only such materials as are incorporated in the Work. Except however, the Contractor may include the value of materials or equipment delivered at the site of the Work (or at some location agreed to in writing) upon delivery to the Owner of:

- .1 an acceptable Transfer of Title (see the Construction Handbook); and
- .2 receipted invoices or other acceptable proof of prior payment by the Contractor for such materials; and
- .3 a stored materials insurance binder (see subparagraph 16.5.2) that covers the materials for which payment is requested, that names the Owner and the Department as an insured party should the stored materials be subjected to any casualty, loss, or theft prior to their inclusion in the Work.

10.4.2 This material(s) or equipment must, in the judgment of the Prime Designer:

- .1 meet the requirements of the Contract, including prior shop drawing, product data, and sample approval; and
- .2 be ready for use; and
- .3 be properly stored by the Contractor and adequately protected until incorporated into the Work.

10.4.3 Failure to comply with subparagraphs 10.4.1 and 10.4.2 may result in Certificates being changed in accordance with M.G.L. c.30 §39K.

10.5. CERTIFICATES FOR PAYMENT

10.5.1 The Prime Designer shall mark the date of receipt on the Contractor's Application for Payment. The Prime Designer will, within seven days after receipt of the Contractor's Application for Payment either,

- .1 issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Prime Designer determines is properly due, or
- .2 return the application to the Contractor if it is not in proper form or contains computations not arithmetically correct; or
- .3 make changes to the application as provided in subparagraph 10.5.2.

10.5.2 The Prime Designer shall notify the Contractor and Owner in writing of the Prime Designer's reasons for withholding certification in whole or in part as provided in subparagraphs 10.6.1.2 and 10.6.1.3.

10.5.3 The Owner may make changes in any Application for Payment submitted by the Contractor in accordance with M.G.L. c.30 §39K, and the payment due on said Application for Payment shall be

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computed in accordance with the changes so made. The provisions of said Section 39K shall govern payments pursuant to Applications for Payment on which the Owner has made changes.

10.5.4 No certificate for payment nor any progress payment shall constitute acceptance of Work not in accordance with the Contract Documents.

10.6 STATUTORY PAYMENT PROVISIONS

10.6.1 After the Prime Designer has issued a Certificate for Payment the Owner shall make payment to the Contractor in accordance with M.G.L. c.30 §39K which provides as follows:

- .1 Within thirty 30 days after receipt from the Contractor, at the place designated by the Owner if such a place is so designated, of a periodic estimate requesting payment of the amount due for the preceding month, the Owner will make a periodic payment to the Contractor for the Work performed during the preceding month and for the materials not incorporated in the Work but delivered and suitably stored at the site (or at some location agreed upon in writing) to which the Contractor has title or to which a Subcontractor has title and has authorized the Contractor to transfer title to the Owner, less (1) a retention based on its estimate of the fair value of its claims against the Contractor and less (2) a retention for direct payments to Subcontractors based on demands for same in accordance with the provisions of Section 39F, and less (3) a retention not exceeding five percent (5%) of the approved amount of the periodic payment.
- .2 After the receipt of a periodic estimate requesting final payment and within 65 days after (a) the Contractor fully completes the Work or substantially completes the work so that the value of the Work remaining to be done is, in the estimate of the Owner, less than one percent (1%) of the original Contract Sum, or (b) the Contractor substantially completes the Work and the Owner takes possession for occupancy, whichever occurs first, the Owner shall pay the Contractor the entire balance due on the Contract less, (1) a retention based on its estimate of the fair value of its claims against the Contractor and of the cost of completing the incomplete and unsatisfactory items of Work less (2) a retention for direct payments to Subcontractors based on demands for same in accordance with the provisions of Section 39F, or based on the record of payments by the Contractor to the Subcontractors under this Contract if such record of payment indicates that the Contractor has not paid Subcontractors as provided in Section 39F.
- .3 If the Owner fails to make payment as herein provided, there shall be added to each such payment daily interest at the rate of three percentage points above the rediscount rate then charged by the Federal Reserve Bank of Boston commencing on the first day after said payment is due and continuing until the payment is delivered or mailed to the Contractor; provided, that no interest shall be due, in any event, on the amount due on a periodic estimate for final payment until thirty days after receipt of such a periodic estimate from the Contractor, at the place designated by the Owner if such a place is so designated. The Contractor agrees to pay to each Subcontractor a portion of any such interest paid in accordance with the amount due each Subcontractor.

10.6.2 DIRECT PAYMENT TO SUBCONTRACTORS

10.6.2.1 The Contractor shall make payments to filed Subcontractors in accordance with M.G.L c.30 §39F which provides as follows:

- .1 Forthwith after the Contractor receives payment on account of a periodic estimate, the Contractor shall pay to each Subcontractor the amount paid for the labor performed and the materials furnished by the Subcontractor, less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the Subcontractor by the Contractor.
- .2 Not later than the 65th day after each Subcontractor substantially completes the Work in accordance with the plans and specifications, the entire balance due under the subcontract less amounts retained by the Owner as the estimated cost of completing the incomplete and unsatisfactory items of Work, shall be due the Subcontractor and the Owner shall pay that amount to the Contractor. The Contractor shall forthwith pay to the Subcontractor the full amount received from the Owner less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the Subcontractor by the Contractor.
- .3 Each payment made by the Owner to the Contractor pursuant to Subparagraphs .1 and .2 of this paragraph for the labor performed and the materials furnished by a Subcontractor shall be made to the Contractor for the account of that Subcontractor and the Owner shall take reasonable steps to

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compel the Contractor to make each such payment to each such Subcontractor. If the Owner has received a demand for direct payment from a Subcontractor for any amount which has already been included in a payment to the Contractor or which is to be included in a payment to the Contractor for payment to the Subcontractor as provided in Subparagraphs .1 and .2, the Owner shall act upon the demand as provided in this section.

- .4 If, within 70 days after the Subcontractor has substantially completed the Subcontract Work, the Subcontractor has not received from the Contractor the balance due under the Subcontract including any amount due for extra labor and materials furnished to the Contractor, less any amount retained by the Owner as the estimated cost of completing the incomplete and unsatisfactory items of Work, the Subcontractor may demand direct payment of that balance from the Owner. The demand shall be by a sworn statement delivered to or sent by certified mail to the Owner, and a copy shall be valid even if delivered or mailed prior to the seventieth day after the Subcontractor has substantially completed the Subcontract Work. Within ten days after the Subcontractor has delivered or so mailed a copy to the Contractor, the Contractor may reply to the demand. The reply shall be by a sworn statement delivered to or sent by certified mail to the Owner, and a copy shall be delivered to or sent by certified mail to the Subcontractor at the same time. The reply shall contain a detailed breakdown of the balance due under the Subcontract including any amount due for extra labor and materials furnished to the Contractor and of the amount due for each claim made by the Contractor and of the amount due for each claim made by the Contractor against the Subcontractor.
- .5 Within 15 days after receipt of the demand by the Owner but in no event prior to the 70th day after substantial completion of the Subcontract Work, the Owner shall make direct payment to the Subcontractor of the balance due under the Subcontract including any amount due for extra labor and materials furnished to the Contractor, less any amount (i) retained by the Owner as the estimated cost of completing the incomplete or unsatisfactory items of Work, (ii) specified in any court proceedings barring such payment, or (iii) disputed by the Contractor in the sworn reply; provided, that the Owner shall not deduct from a direct payment any amount as provided in part (iii) if the reply is not sworn to, or for which the sworn reply does not contain the detailed breakdown required by Subparagraph .4. The Owner shall make further direct payments to the Subcontractor forthwith after the removal of the basis for deductions from direct payments made as provided in part (i) and (ii) of this Subparagraph.
- .6 The Owner shall forthwith deposit the amount deducted from a direct payment as provided in part (iii) of Subparagraph .5 in an interest-bearing joint account in the names of the Contractor and the Subcontractor in a bank in Massachusetts selected by the Owner or agreed upon by the Contractor and the Subcontractor and shall notify the Contractor and the Subcontractor of the date of the deposit and the bank receiving the deposit. The bank shall pay the amount in the account, including accrued interest, as provided in an agreement between the Contractor and the Subcontractor or as determined by decree of a court of competent jurisdiction.
- .7 All direct payments and all deductions from demands for direct payments deposited in an interest-bearing account or accounts in a bank pursuant to Subparagraph .6 shall be made out of amounts payable to the General Contractor at the time of receipt of a demand for direct payment from a Subcontractor or out of amounts which later become payable to the Contractor and in order of receipt of such demands from Subcontractors. All direct payments shall discharge the obligation of the Owner to the Contractor to the extent of such payment.
- .8 The Owner shall deduct from payments to the Contractor amounts which, together with the deposits in interest-bearing accounts pursuant to Subparagraph .6, are sufficient to satisfy all unpaid balances of demands for direct payment received from Subcontractors. All such amounts shall be earmarked for such direct payments, and the Subcontractors shall have a right to such deductions prior to any claims against such amounts by creditors of the Contractor.
- .9 If the Subcontractor does not receive payment as provided in Subparagraph .1 or if the Contractor does not submit a periodic estimate for the value of the labor and materials performed or furnished by the Subcontractor and the Subcontractor does not receive payment for same when due less the deductions provided for in Subparagraph .1, the Subcontractor may demand direct payment by following the procedure in Subparagraph .4 and the Contractor may file a sworn reply as provided in that same Subparagraph. A demand made after the first day of the month following that for which the Subcontractor performed or furnished the labor and materials for which the Subcontractor

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seeks payment shall be valid even if delivered or mailed prior to the time payment was due on a periodic estimate from the Contractor. Thereafter the Owner shall proceed as provided in Subparagraphs .5, .6, .7, and .8.

10.7 FINAL PAYMENT

10.7.1 Upon completion of the Work, the Contractor shall be entitled to payment of the Contract balance, in accordance with Subparagraph 10.6.1.2 and per the process described in Division 1 of the Specifications.

10.7.2 The acceptance by the Contractor of the last payment due under this Contract or the execution of the Final Certificate of Completion, shall operate as a release to the Owner, Department and the Prime Designer from all claims and liability related to this Contract.

10.8 PAYMENT LIABILITIES OF CONTRACTOR

10.8.1 The Contractor shall be responsible to the Owner for all expenses, losses, and damages incurred in consequence of any defect, omission, or mistake of the Contractor or any of its employees, Subcontractors, or suppliers.

10.8.2 The Owner may retain any moneys which would otherwise be payable under this Contract and apply the same, or so much as may be necessary therefore, to the payment of any expenses, losses, or damages incurred by the Owner as a direct result of the Contractor's failure to perform its obligations hereunder.

ARTICLE 11 GUARANTEES AND WARRANTIES

11.1 GENERAL GUARANTY

If at any time during the period of one (1) year from the date of Substantial Completion as defined in Paragraph 9.6, any part of the Work shall, in the reasonable determination of the Prime Designer or Owner, require replacing or repairing due to the fact that it is broken, defective, or otherwise does not conform to the Contract Documents, the Owner will notify the Contractor to make the required repairs or replacement.

11.2 If the Contractor shall neglect to commence such repairs or replacement to the satisfaction of the Owner within ten (10) days from the date of giving or mailing such notice, then the Owner may employ other persons to make the same.

11.3 The Contractor agrees, upon demand, to pay to the Owner all amounts which the Owner expends for such repairs or replacements.

11.4 During this one year guarantee period any corrective work shall be performed in accordance with the applicable terms of this Contract. For items of work completed after use and occupancy has been taken, the one year guarantee shall commence at the time the Owner accepts such items.

11.5 This one year guarantee shall not limit any express guaranty or warranty provided elsewhere in the Contract.

11.2 SPECIAL GUARANTEES AND WARRANTIES

11.2.1 Guarantees and warranties required in the various sections of the Specifications must be delivered to the Prime Designer before final payment to the Contractor may be made, or in the case of guarantees and warranties which originate with a Subcontractor's section of the Work, before final payment for the amount of that subtrade or for the phase of Work to which the guarantee or warranty relates.

11.2.2 The failure to deliver a required guarantee or warranty shall constitute a failure to fully complete the Work in accordance with the Contract Documents.

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11.2.3 The Contractor's obligation to correct Work as set forth in Paragraph 4.12 is in addition to, and not in substitution of, such guarantees or warranties as may be required in the various Sections of the Specifications.

ARTICLE 12 MISCELLANEOUS LEGAL REQUIREMENTS

12.1 GENERAL

The Contractor shall stay fully informed of all existing and future state and national laws and municipal ordinances and regulations in any manner affecting those engaged or employed in the work, or the materials used or employed in the work, or in any way affecting the conduct of the Work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the Contract Work. All provisions of law that apply to this Contract are hereby made a part of this Contract. If any discrepancy or inconsistency is discovered in the Contract Documents in relation to any such law, ordinance, regulation, order or decree, the Contractor shall forthwith report the same to the Owner in writing.

12.1.1 The Contractor shall cause all of its agents and employees to observe and comply with all such existing and future laws, ordinances, regulations, orders and decrees.

12.2 CORPORATE DISCLOSURES

The Contractor, if a foreign corporation, shall comply with M.G.L. c.181 §3 and §5, and M.G.L. c.30 §39L.

12.3 VETERANS PREFERENCE

In the employment of mechanics and apprentices, teamsters, chauffeurs, and laborers in the construction of public works in the Commonwealth, preference shall first be given to citizens of the Commonwealth who have been residents of the Commonwealth for at least six months at the commencement of their employment and who are veterans as defined M.G.L. c.4 §7 (34), and who are qualified to perform the work to which the employment relates; and secondly, to citizens of the Commonwealth generally who have been residents of the Commonwealth for at least six months at the commencement of their employment, and if they cannot be obtained in sufficient numbers, then to citizens of the United States

12.4 PREVAILING WAGE RATES

The Commissioner of the Department of Labor, Division of Occupational Safety has established the Schedule found in Division One of the Specifications, listing the prevailing minimum wage rates that must be paid to all workers employed on the Contract. Such Schedule shall continue to be the minimum rate of wages payable to workers on this Contract throughout the term of the Contract. The Contractor shall not have any claim for extra compensation from the Owner if the actual wages paid to employees on the Contract exceeds the rates listed on the Schedule. The Contractor shall cause a copy of said Schedule to be kept in a conspicuous place at the Project site during the term of the Contract. (See M.G.L. c.149 §26-27H.) If reserve police officers are employed by the Contractor, they shall be paid the prevailing wage of regular police officers. (See M.G.L. c.149 §34B).

12.5 VEHICLE AND EQUIPMENT OPERATORS

If the Commissioner of the Department of Labor, Division of Occupational Safety has established a Schedule of wage rates to be paid to the operators of trucks, vehicles or equipment for this Project, the Contractor shall be obligated to pay such operators at least the minimum wage rate contained on such Schedule. (See M.G.L. c.149 §26-27H).

12.6 EIGHT HOUR DAY AND LODGING

12.6.1 No laborer, workman, mechanic, foreman or inspector working in the employment of the Contractor, Subcontractor or other person doing or contracting to do the whole or part of the Work, shall be required or permitted to work any more than eight hours in any one day, or more than 48 hours in any one week, or more than six days in any one week, except in cases of emergency.

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12.7 EXECUTIVE ORDERS

The Contractor shall comply with the provisions of M.G.L. c.151B; Executive Order No. 524 Establishing the Massachusetts Supplier Diversity Program (SDP), Executive Order 526, Order regarding Non-Discrimination, Diversity, Equal Opportunity, and Affirmative Action; pertaining to minority and women owned business enterprises; Executive Order 527 establishing the Office of Access and Opportunity and Executive Order 481, prohibiting the use of undocumented workers on state contracts and all regulations promulgated pursuant thereto. The aforementioned law, executive orders, regulations and any amendments are incorporated herein by reference and made a part of this Contract.

12.8 CONFLICT OF INTEREST:

The Contractor covenants, that (1) presently, there is no financial interest and shall not acquire any such interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement or which would violate M.G.L. c.268A, as amended; (2) in the performance of this Contract, no person having any such interest shall be employed by the Contractor or engaged as a subcontractor by the contractor; and (3) no partner or employee of the firm is related by blood or marriage to any Board Member or employee of the Awarding Authority.

ARTICLE 13 CONTRACTOR'S ACCOUNTING REQUIREMENTS

13.1 DEFINITIONS

13.1.1 "Contractor" means any person, corporation, partnership, joint venture, sole proprietorship, or other entity awarded this Contract.

13.1.2 "Contract" means any contract awarded or executed pursuant to M.G.L. c.30 §39M or M.G.L. c.149 §44A-J, which is for an amount greater than one hundred thousand dollars (\$100,000).

13.1.3 "Records" means books of original entry, accounts, checks, bank statements and all other banking documents, correspondence, memoranda, invoices, computer printouts, tapes, discs, papers and other documents or transcribed information of any type, whether expressed in ordinary or machine language.

13.1.4 "Independent Certified Public Accountant" means a person duly registered in good standing and entitled to practice as a certified public accountant under the laws of the place of his/her residence or principal office and who is in fact independent.

13.1.5 "Audit," when used in regard to financial statements, means an examination of records by an independent certified public accountant in accordance with generally accepted accounting principles and auditing standards for the purpose of expressing a certified opinion thereon, or, in the alternative, a qualified opinion or a declination to express an opinion for stated reasons.

13.1.6 "Accountant's Report," when used in regard to financial statements, means a document in which an independent certified public accountant indicates the scope of the audit which he/she has made and sets forth his/her opinion regarding the financial statements taken as a whole with a listing of noted exceptions and qualifications, or an assertion to the effect that an overall opinion cannot be expressed. When an overall opinion cannot be expressed the reason therefore shall be stated. An accountant's report shall include a signed statement by the responsible corporate officer attesting that management has fully disclosed all material facts to the independent certified public accountant, and that the audited financial statement is a true and complete statement of the financial condition of the Contractor.

13.1.7 "Management," when used herein, means the chief executive officers, partners, principals or other person or persons primarily responsible for the financial and operational policies and practices of the Contractor.

13.1.8 Accounting terms, unless otherwise defined herein shall mean, in accordance with generally accepted accounting principles and auditing standards.

13.2 RECORD KEEPING

13.2.1 The Contractor shall make, and keep for at least six years after final payment, books, records, and accounts which in reasonable detail accurately and fairly reflect the transactions and dispositions of the Contractor.

13.2.2 Until the expiration of six years after final payment, the Inspector General, the Owner, and the Department shall have the right to examine any books, documents, papers or records of the Contractor and Subcontractors that directly pertain to, and involve transactions relating to the Contractor and Subcontractors.

13.2.3 The Contractor shall describe any change in the method of maintaining records or recording transactions which materially affects any statements filed with the Owner including the date of the change and reasons therefore, and shall accompany said description with a letter from the Contractor's independent certified public accountant approving or otherwise commenting on the changes.

13.2.4 Prior to the execution of the Contract, the Contractor shall file a statement of management on internal accounting controls as set forth in Paragraph 13.3 below.

13.2.5 Prior to the execution of the Contract, the Contractor shall file an audited financial statement for the most recent completed fiscal year as set forth in Paragraph 13.4 below and will continue to file such statement annually during the term of the Contract.

13.3 STATEMENT OF MANAGEMENT CONTROLS

13.3.1 Prior to execution of the Contract, the Contractor shall file with the Owner a statement of management as to whether the system of internal accounting controls of the Contractor and its subsidiaries reasonably assures that:

- .1 transactions are executed in accordance with management's general and specific authorization;
- .2 transactions are recorded as necessary to:
 - a. to permit preparation of financial statements in conformity with generally accepted accounting principles, and
 - b. to maintain accountability for assets;
- .3 access to assets is permitted only in accordance with management's general or specific authorization; and
- .4 the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action was taken with respect to any difference.

13.3.2 Prior to execution of the Contract, the Contractor shall also file with the Owner a statement prepared and signed by an independent certified public accountant, stating that the accountant has examined the statement of management on internal accounting controls, and expressing an opinion as to:

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- .1 whether the representations of management in response to subparagraph 13.3.1 above are consistent with the results of management's evaluation of the system of internal accounting controls; and
- .2 whether such representations of management are reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the applicant's financial statement.

13.4 ANNUAL FINANCIAL STATEMENT

Every Contractor awarded a contract shall annually file with the Owner during the term of the Contract a financial statement prepared by an independent certified public accountant on the basis of an audit by such accountant. The final statement filed shall include the date of final payment. All statements shall be accompanied by an accountant's report.

**ARTICLE 14
EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS**

14.1 The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, age, handicap, or sex. The aforesaid provision shall include, but not be limited to, the following employment upgrading, demotion or transfer; recruitment advertising; recruitment layoff; termination; rates of pay or other forms of compensation; conditions or privileges of employment; and selection for apprenticeship.

14.2 The Contractor must provide information as is necessary, in the judgment of the Owner or the Department, to ascertain compliance with the terms of Specification Section 00.73.36.

**ARTICLE 15
MINORITY OR WOMAN OWNED ENTERPRISES
SUPPLIER DIVERSITY PROGRAM**

15.1 COMPLIANCE

15.1 The Contractor must provide information as is necessary, in the judgment of the Owner and the Department, to ascertain compliance with the terms of Specification Section 00.73.39.

**ARTICLE 16
INSURANCE**

16.1 INSURANCE REQUIREMENTS

16.1.1 The Contractor shall take out and maintain insurance coverage as listed in subparagraphs 16.2 - 16.8 with respect to the on-going operations as well as the completed operations for two years after substantial completion of this Contract. This insurance shall be provided at the Contractor's expense and shall be in full force and effect for the full term of the Contract.

16.1.2 All policies shall be issued by companies authorized to write that type of insurance under the laws of this Commonwealth of Massachusetts.

16.2 CONTRACTOR'S COMMERCIAL GENERAL LIABILITY

16.2.1 Contractor shall provide to the Owner the "Commercial General Liability" policy form CG0001, or the exact equivalent with respect to the operations performed by any employee, Subcontractor, or supplier with limits of no less than:

Each Occurrence	\$1,000,000
General Aggregate	\$2,000,000 per project
Products-Completed Operations Aggregate	\$2,000,000
Personal Injury & Advertising Injury	\$1,000,000
Damages to Premises Rented by You	\$50,000
Not Specified Medical Expenses	\$5,000

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

Umbrella coverage:	
Each Occurrence	\$5,000,000
General Aggregate	\$5,000,000
Products-Completed Operations Aggregate	\$5,000,000

16.2.2 The completed operations coverage shall be maintained for a period of two (2) years after Substantial Completion as defined in subparagraph 9.6.1.

16.2.3 POLLUTION/ABATEMENT CONTRACTORS The policy shall:

- .1 be written on a "true" occurrence basis without any "sunset" clause;
- .2 have the pollution exclusion amended to add back coverage for all pollution claims.
- .3 include separate products and completed operations coverage, which shall be maintained for (2) years after Substantial Completion, as defined by G.L 30 §39G; and
- .4 provide the following limits of insurance:

Each occurrence	\$1,000,000
General Aggregate	\$2,000,000
Products-Completed Operations Aggregate	\$2,000,000
Personal Injury & Advertising Injury	\$1,000,000
Damage to Premises Rented by You	\$50,000
Medical Expense	\$5,000

16.3 VEHICLE LIABILITY

Contractor shall provide the following minimum vehicle liability coverage with respect to the operations of any employee for owned, non-owned, and hired vehicles using ISO Business Auto Coverage form CA0001, or the exact equivalent. If the Contractor owns no vehicles, this requirement may be met through a non-owned endorsement to the Commercial General.

Liability: Bodily Injury	\$ 1,000,000. each person
	\$ 1,000,000. each accident
Property Damage	\$ 1,000,000. each accident
	or
	\$1,000,000 Combined Single Limit

16.4 WORKER'S COMPENSATION

Provide the following coverage in accordance with M.G.L. c.149 §34A and c.152 as amended:

Worker's Compensation: Coverage A	Per G.L. c149 §34 and c152, as amended.
Employer's Liability: Coverage B	\$500,000 Bodily Injury by Accident each accident
	\$500,000 Bodily Injury by Disease each employee
	\$500,000 Bodily Injury by Disease policy limit

16.5 PROPERTY COVERAGE

16.5.1 Provide Builder's Risk (Special Perils) coverage against loss or damage by fire and against loss or damage covered by the special perils insurance endorsement on all work included in this contract in an amount equal to at least 80% of Contract Amount.

16.5.2 When work will be completed on existing buildings owned by the Owner, the Contractor shall provide an installation floater, in the full amount of the Contract, for the requirements set forth in Subparagraph 16.5.

16.5.3 This policy and/or installation floater shall indicate if Stored Materials coverage is provided as required by Paragraph 10.4.

16.5.4 The policy or policies shall specifically state that they are for the benefit of and payable to the Owner, the Department, the Contractor, and all persons furnishing labor or labor and materials for the Contract Work, as their interests may appear.

16.5.5 The Builder's Risk (Special Perils) coverage shall include any costs for work performed by the Prime Designer or any consultant as the result of a loss experienced during the life of this contract.

16.6 OWNER AS ADDITIONAL INSURED

The Owner and Department shall be named as additional insured on the Contractor's Commercial Liability Policies.

16.7 CERTIFICATES OF INSURANCE, POLICIES

16.7.1 Certificates of insurance, acceptable to the Owner, shall be submitted to the Owner simultaneously with the execution of the Contract. Certificates shall indicate that the contractual liability coverage, and Owner's and Contractor's Protective Liability coverage is in force, as well as the deletions of the XCU exclusions.

16.7.2 The Contractor shall file the original and one certified copy of all policies with the Owner and one with the Department within sixty days after Contract award. If the Owner is damaged by the Contractor's failure to maintain such insurance and to so notify the Owner, then the Contractor shall be responsible for all reasonable costs attributable thereto.

16.8 CANCELLATION

Cancellation of any insurance required by this contract, whether by the insurer or the insured, shall not be valid unless written notice thereof is given by the party proposing cancellation to the other party and Owner at least ten(10) days prior to the effective date thereof, which shall be expressed in said notice.

**ARTICLE 17
INDEMNIFICATION**

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

**ARTICLE 18
PERFORMANCE AND PAYMENT BONDS**

18.1 CONTRACTOR BONDS

18.1.1 The Contractor shall provide the Owner with performance and payment (labor and materials) bonds in the form provided by the Department, (Forms 00.61.13.13 and 00.61.13.16) executed by a surety licensed by the Commonwealth's Division of Insurance. Each such bond shall be in the amount of the Contract Sum.

18.1.2 If at any time prior to final payment to the Contractor, the Surety:

- .1 is adjudged bankrupt or has made a general assignment for the benefit of its creditors;
 - .2 has liquidated all assets and has made a general assignment for the benefit of its creditors;
 - .3 is placed in receivership;
 - .4 otherwise petitions a state or federal court for protection from its creditors; or
 - .5 allows its license to do business in Massachusetts to lapse or be revoked;
- the Contractor shall, within 21 days of any such action listed above, provide the Owner with new performance and payment bonds as described in Paragraph 18.1.1. Such bonds shall be provided solely at the Contractor's expense.

18.2 SUBCONTRACTOR BONDS

18.2.1 The Contractor may list in its bid that any or all filed Subcontractors provide the Contractor with payment and performance bonds for the full amount of the Subcontract. The costs for said bonds shall be the responsibility of the Contractor.

18.2.2 In the event the Contractor lists in its bid that filed Subcontractors provide bonds, and subsequently waives the requirement, the Contractor shall provide the Owner with a certification that they understand if the filed subcontractor defaults or is terminated, the Contractor accepts full responsibility and costs related to said default or termination with a credit change order in an amount equal to the bond premium it would have paid had it required the filed Subcontractor to provide such bonds.

ARTICLE 19 TERMINATION

19.1 TERMINATION FOR CAUSE

19.1.1 The Owner may terminate this contract for cause if it determines that any of the following circumstances have occurred:

- .1 The Contractor is adjudged bankrupt or has made a general assignment for the benefit of its creditors;
- .2 A receiver has been appointed of the Contractor's property;
- .3 All or a part of the Work has been abandoned;
- .4 The Contractor has sublet or assigned all or any portion of the Work, the Contract, or claims there under, without the prior written consent of the Owner, except as provided in the Contract;
- .5 The Prime Designer has determined that the rate of progress required on the project is not being met, or
- .6 The Contractor has substantially violated any provisions of this Contract.

19.1.2 In the event of such termination, the Owner may hold the Contractor and its sureties liable in damages as for a breach of contract, or the Owner may notify the Contractor to discontinue all work, or any part thereof, and the Contractor shall discontinue all work, or any part thereof, as the Owner may designate.

19.1.3 The Owner may complete the work, or any part thereof, and charge the expense of completing the Work or part thereof, to the Contractor.

19.1.4 The Owner may take possession of and use any materials, machinery, implements and tools found upon the site of said Work. The Owner shall not be liable for any depreciation, loss or damage to said materials, machinery, implements or tools during said use and the Contractor shall be solely responsible for their removal from the Project site after the Owner has no further use for them.

19.1.5 The Owner may, at its option, require the surety or sureties to complete the Contract.

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

19.2 TERMINATION LIABILITIES

19.2.1 All expenses charged under Paragraph 19.1 shall be deducted and paid by the Owner out of any moneys then due or to become due the Contractor under this Contract; and in such accounting the Owner shall not be held to obtain the lowest figures, by competitive bid or otherwise, for the completion of the Work or any part thereof.

19.2.2 All sums actually paid by the Owner to complete the Work shall be charged to the Contractor. In case the expenses charged are less than the sum which would have been payable under this Contract if the same had been completed by the Contractor, the Contractor shall be entitled to receive the difference. In case such expenses shall exceed the said sum, the Contractor shall pay the amount of the excess to the Owner.

19.2.3 Expenses incurred under subparagraph 19.1 shall also include, but not be limited to, costs for architectural/engineering extra services and Project Representative services required, in the opinion of the Owner, to successfully inspect and administer the construction contract through final completion, as described in Paragraph 9.7.

19.3 TERMINATION - NO FAULT

19.3.1 In the event that this Contract is terminated by the Owner, and termination is not based on a reason listed in Paragraph 19.1, the Contractor shall be compensated for its costs incurred on the Project, including reasonable costs of de-mobilization, calculated on a percent completion basis as provided in Article 10, covering the period of time between the last periodic payment and the date of termination.

19.3.2 Payment by the Owner pursuant to Subparagraph 19.3.1 shall be considered to fully compensate the Contractor for all claims and expenses and those of any consultants, Subcontractors, and suppliers, directly or indirectly attributable to the termination, including any claims for lost profits.

19.4 ADMINISTRATOR'S APPROVAL

Termination of the Contract requires the prior written approval of the Administrator.

END OF SECTION

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Section 00.73.36
EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS
11/07/2016

1. DEFINITIONS

For purposes of this Section 00.73.36, the following additional definitions shall apply:

- A. "Minority" means a person who meets one or more of the following definitions:
 - 1. American Indian or Native American means: all persons having origins in any of the original peoples of North America and who are recognized as an Indian by a tribe or tribal organization.
 - 2. Asian means: All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian sub-continent, or the Pacific Islands, including, but Not limited to China, Japan, Korea, Samoa, India, and the Philippine Islands.
 - 3. Black means: All persons having origins in any of the Black racial groups of Africa, including, but not limited to, African-Americans, and all persons having origins in any of the original peoples of the Cape Verdean Islands.
 - 4. Eskimo or Aleut means: All persons having origins in any of the peoples of Northern Canada, Greenland, Alaska, and Eastern Siberia.
 - 5. Hispanic means: All persons having their origins in any of the Spanish-speaking peoples of Mexico, Puerto Rico, Cuba, Central or South America, or the Caribbean Islands.
- B. "Commission" or "MCAD" means the Massachusetts Commission Against Discrimination.
- C. "E.E.O. Officer" or Equal Employment Opportunity Officer means those persons designated by the Contractor, the Owner, or any other agency or party having jurisdiction under this contract, that serve in a capacity to implement this Section.

2. CONDITIONS

- A. The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, age, handicap, or sex. The aforesaid provision shall include, but not be limited to, the following: employment upgrading, demotion or transfer; recruitment advertising; recruitment layoff; termination; rates of pay or other forms of compensation; conditions or privileges of employment; and selection for apprenticeship.
- B. The Contractor shall post notices provided by the Commission, in conspicuous places, setting forth the provisions of the Fair Employment Practices Law of the Commonwealth.

- C. The Contractor shall undertake in good faith affirmative action measure designed to eliminate any discriminatory barriers in the terms and conditions of employment on the grounds of race, color, religious creed, national origin, age, handicap, or sex, and to eliminate and remedy any effects of such discrimination in the past. Such affirmative action shall entail positive and aggressive measures to ensure equal opportunity in the areas of hiring, upgrading, demotion or transfer, recruitment, layoff or termination, rate of compensation, and in-service or apprenticeship training programs. This affirmative action shall include all action required to guarantee equal employment opportunity for all persons, regardless of race, color, religious creed, national origin, age or sex.
- D. The Contractor shall not discriminate on grounds of race, color, religious creed, national origin, age, or sex in employment practices, in the selection or retention of Subcontractors, or in the procurement of materials and rentals of equipment.
- E. The Commission and a designee of the Owner shall have access to the construction site and all applicable records of the Contractor and Subcontractors.
- F. The Contractor's EEO Certificate must be signed by the low general and all filed sub-bidders as a condition of Contract validation by the Department.

3. MINORITY GOAL MINIMUM MINORITY PERCENTAGES

- A. Pursuant to his/her obligations under the preceding section, the Contractor shall strive to achieve on this project the labor participation goals contained herein. The participation goals for this project shall be **15.3%** for minorities and **6.9%** for women.
- B. The participation goals, as set forth herein, shall not be construed as quotas or set-asides; rather, such participation goals will be used to measure the progress of the Commonwealth's equal opportunity, non-discrimination and affirmative action program. Additionally, the participation goals contained herein should not be seen or treated as a floor or as a ceiling for the employment of particular individuals or group of individuals.
- C. Such job categories shall include but not be limited to those "Classes of Work" enumerated in M.G.L. c.149 §44F and for trades covered by Item 1 of the Contractor's bid.
- D. These percentages shall apply to the Contractor and to all Subcontractors, regardless of tier, for all on-site Work.

4. REFERRALS

- A. In the hiring of minority journeymen, apprentices, trainees and advanced trainees, the Contractor shall rely on referrals from a multi-employer affirmative action program approved by the Department or the Commission; and traditional referral methods utilized by the construction industry, where such referrals are needed to meet minority hiring requirements. The Contractor shall keep accurate records of such requests for referrals.
- B. Records of employment referral orders, prepared by the Contractor, shall be made available to the Owner and to the Department upon request.

5. EEO WORK FORCE REPORTING PROCEDURES

- A. The Contractor shall provide the following information to the Owner on copies of the forms found at the end of this Section.
 - 1. Weekly Manpower Reports 00.73.36.04: The Contractor shall prepare a report after each week of activity, reflecting the actual working hours of all personnel identified as minority or non-minority.
 - a. This report shall be received by the Owner no later than the Friday following the week reported.
 - b. Failure to provide information shall result in sanctions as provided in this section.

6. COMPLIANCE - REPORTS AND INFORMATION

- A. The Contractor shall provide all information and reports required by the Owner or the Department and will permit access to its facilities and to any books, records, accounts and other sources of information which may be determined by the Owner or the Department to affect the employment of personnel. Where information required is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the Owner or the Department as appropriate and shall set forth what efforts have been made to obtain the information.

7. COMPLIANCE - INVESTIGATIONS

- A. Whenever the Owner's EEO Officer, the MCAD, or the Department believes the Contractor may not be operating in compliance with the terms of these requirements, the Department shall conduct an investigation, and may confer with the parties, to verify such allegations. The Department shall not initiate an investigation without prior notice to the Contractor.

- B. If the Department finds the Contractor in non-compliance, it shall make a preliminary report, and notify the Contractor in writing of the steps necessary to bring such Contractor into compliance. A copy of this report shall be sent to the Department's Affirmative Action Officer.

8. COMPLIANCE - DEPARTMENT - AFFIRMATIVE ACTION INVESTIGATION

- A. If the Contractor fails or refuses to fully perform the steps necessary to achieve compliance, the Department shall make a report of non-compliance to the Department's Affirmative Action Officer, who will then conduct an investigation.
- B. Should the Department's Affirmative Action Officer find the Contractor in non-compliance a final report recommending the imposition of one or more of the sanctions listed below shall be issued.
- C. Within fifteen (15) days of said report the Department shall, after due notice and giving the Contractor an opportunity to respond, move to impose one or more of the following sanctions to attain compliance.
- D. If the Department's Affirmative Action Office believes the Contractor has taken or is taking every possible measure to achieve compliance, a report shall show the Contractor is in compliance.

9. SANCTIONS

- A. For each week that the Contractor fails or refuses to comply, the Department may recover from the Contractor, 1/100 of 1% of the original Contract Sum or \$1000 whichever sum is greater, in the nature of liquidated damages.
- B. If a Subcontractor is in non-compliance, the Department may recover from the Contractor, 1/10 of 1% of the Subcontract Sum, or \$400 whichever sum is greater, in the nature of liquidated damages, to be assessed by the Contractor as a back charge against the Subcontractor for each week that Subcontractor fails or refuses to comply.
- C. The Owner may suspend part or all of any payment due under the contract until such time as the Contractor or any Subcontractor is able to demonstrate compliance with the terms of the Contract.
- D. The Owner may terminate, or cancel part or all of the Contract, in accordance with the provisions of Article 19 of the General Conditions, unless the Contractor or any Subcontractor is able to demonstrate, within a specified time, compliance with the terms of the Contract.

- E. The Contractor may request the Department and Owner to suspend the sanctions conditionally. Whereupon the Department shall investigate corrective measures taken by the Contractor and shall either lift or re-impose the sanctions.

10. SEVERABILITY

- A. The provisions of this section are severable, and if any of these provisions shall be held unconstitutional by any court of competent jurisdiction, the decision of such court shall not affect or impair any of the remaining provisions of the Contract.

END OF SECTION

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Form 00.73.36.01
FORM OF CONTRACTOR'S EQUAL EMPLOYMENT CERTIFICATION
11/07/2016
COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

This form must be completed and submitted by the Contractor prior to the signing of the Owner-Contractor Agreement.

This certifies that:

Contractor

Street Address

City/State/Zip Code

1. Intends to use the following listed construction trades in the work under this contract:

2. Will comply with the minority manpower ratio and specific affirmative action steps contained in Section 00.73.36 of this Contract; and

3. Will obtain similar certifications from each of its subcontractors and submit to the Owner prior to the award of any subcontract under this contract the subcontractor's certification.

Signature of authorized Representative of Contractor

Name and Title

Date

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Massachusetts Department of
Housing and Community Development



EEO CONTRACTOR'S WEEKLY MANPOWER REPORT

_____ Housing Authority Development No. _____ Contract Amount \$ _____
 General Contractor: _____ **Minority Participation Goal 15.3%** **Women Participation Goal 6.9%**
 Name of Contractor Filing Report: _____ Trade(s): _____
 Week Ending: _____ Report No.: _____ Check Here if you are a non-filed Subcontractor
 Check Here if this is a Final Report Date Work Began: _____ Date Work Completed _____

Job Category	# of Employees	Weekly Total Manhours	Total Manhours to Date	# of Minorities	Weekly Total Minority Manhours	Weekly % Minority Manhours	# of Women	Weekly Total Women Manhours	Weekly % Women Manhours	Total Manhours to Date	Total Minority Manhours to Date	% of Minority Manhours to Date	Total Women Manhours to Date	% of Women Manhours to Date

Mail Reports to: Awarding Authority

Prepared by: _____
 Title: _____
 Date: _____ 20__

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Section 00.73.39
SUPPLIER DIVERSITY PROGRAM - EXECUTIVE ORDER 524
MINORITY AND WOMEN BUSINESS ENTERPRISES

1. PROJECT REQUIREMENTS

General bidders must agree to contract with minority and women-owned businesses as certified by the Supplier Diversity Office (SDO) formerly known as SOMWBA. The amount of participation which shall be reserved for such enterprises shall not be less than the percentages stated in document 00.11.00 Advertisement found elsewhere in these contract documents.

2. DEFINITIONS:

For purposes of this Section 00.73.39 the following definitions shall apply:

- A. "Minority business enterprise" or "MBE", means a business enterprise that is owned and controlled by one or more socially or economically disadvantaged persons. Such disadvantage may arise from cultural, racial, chronic economic circumstances or background or other similar cause. Such persons include, but are not limited to, African Americans, Cape Verdeans, Western Hemisphere Hispanics, Asians, American Indians, Eskimos, and Aleuts. For purposes of section 61 and of section 40N of chapter 7, the term "minority owned business" shall have the same meaning as "minority business enterprise".
- B. "SDO" means the Supplier Diversity Office.
- C. "Minority Business Enterprise" (MBE) means a business organization which is owned and controlled fifty-one percent (51%) or more by one or more minority group members and certified as such by SDO.
- D. "Women Business Enterprise" (WBE) means a business organization which is owned and controlled fifty-one percent (51%) or more by one or more women and certified as such by SDO.
- E. "MBE/WBE Manufacturer" means a person or firm certified by SDO and engaged in the process of making, fabricating, constructing, forming or assembling a product(s) from raw, unfinished, semi-finished, or finished materials through a direct contract with a contractor, subcontractor, or supplier.
- F. "MBE/WBE Subcontractor" means a person or firm certified as such by SDO and contractually engaged by the contractor to perform a portion (a) of the contracted Work, including labor, materials and supplies, or (b) labor, materials and supplies, or any combination thereof.
- G. "MBE/WBE Supplier" means a person or firm certified as such by SDO and engaged in selling of materials and supplies to contractors, subcontractors,

and/or manufacturers for the purpose of constructing, repairing, remodeling, adding to or subtracting from, or improving any building, structure or property through a direct contract with a contractor or subcontractor. Said MBE/WBE must sustain substantial financial risk in the process of performing/supplying the work for this contract. The Department may request information to determine where the MBE/WBE obtains supplies and materials.

H. "Amount of Participation" means the percentage stated on the advertisement of the final contract amount which is to be contracted to MBE/WBEs for work to be performed on this contract in accordance with this Section 00.73.39.

3. JOINT VENTURES

A. A Joint Venture shall mean a business arrangement between MBE/WBEs and a non-SDO certified General Contractor, in which the MBE or WBE has at least a twenty-five percent (25%) interest in the Contract, and in which the other has at least the required minimum percentage of participation in the Contract. It is expected that the M/WBE having the minimum 25% interest will participate in the management and decision making aspects of the project proportionate to its percentage of ownership and interest in the Contract.

B. An M/WBE Joint Venture shall mean a business arrangement where in a SDO certified MBE or WBE serves as a General Contractor and engages the services of another SDO certified MBE or WBE (whichever is required) in an amount not less than twenty-five percent (25%) of the Contract amount, and in which the management and decision making aspects of the project are shared to the degree of participation and ownership in the Contract.

4. CONDITIONS

A. Once the Contractor agrees to comply with these provisions, and within 5 working days after receipt of bids, unless an extension of time or waiver for compliance is granted in accordance with Article 3 of the Instructions to Bidders, the apparent low bidder must submit a completed Participation Schedule 00.73.39.01 and Letters of Intent 00.73.39.02 covering each SDO certified MBE and WBE used to satisfy the requirements of this Section 00.73.39. These letters shall include the contract items the MBEs and/or WBEs are proposing to perform and the prices that the MBEs and/or WBEs propose to charge for the work.

B. MBE and WBEs listed on the Participation Schedule may be any combination of MBE/WBE Subcontractors, MBE/WBE Manufacturers, or MBE/WBE Suppliers as defined in Paragraph 2. G.

- C. Letters of Intent are not required from filed sub-bidders who are SDO Certified MBEs or WBEs.
- D. The amount of participation of MBE/WBEs listed in the Participation Schedule must total at least the percentage set forth in the Advertisement. The amounts indicated in the Letter of Intent shall not be less than the amount shown on the Participation Schedule. The SDO Certified MBEs and/or WBEs. for whom Letters of Intent are submitted must be identical to the ones listed on the Participation Schedule. No substitutions shall be made without the written approval of the Department.
- E. The Contractor may include MBEs and/or WBEs utilized by non-certified subcontractors to satisfy the requirements of this article.
- F. MBE/WBE Certification from any other agency/municipality shall not be considered applicable for this Contract.
- G. If a filed sub-bidder listed as a MBE and/or WBE is rejected for failure to obtain a performance and payment bond from a surety qualified to do business in the Commonwealth when requested by the general bidder to do so at the time of bid, said failure shall not entitle the general bidder to avoid the requirements of this Section 00.73.39.
- H. The Contractor shall not change the MBEs and/or WBEs listed in the Participation Schedule or make any other such MBE/WBE substitutions after the Contract has been executed or during construction without the written approval of the Owner and the Department.

5. COMPLIANCE

- A. The Contractor must provide information as is necessary, in the judgment of the Owner or the Department, to ascertain compliance with the terms of this Section 0073.39.
- B. The Contractor shall maintain records of Payment to Minority Business Enterprises.

6. MBE/WBE REPORTING PROCEDURES

- A. The Contractor shall maintain records of Payment to Minority Business Enterprises.
 - 1. The Department or Owner may request copies of canceled checks to confirm compliance.

7. SANCTIONS

- A. If at any time during the life of this Contract, the Contractor is found to be out of compliance with this Section 00.73.39, sanctions may be imposed within fifteen (15) working days after notification to the Contractor of said violation. If within those fifteen (15) days the Contractor remedies the non-compliance to the satisfaction of the Department, or provides compelling documentation as outlined in Paragraph 8.B said sanctions may be postponed or waived. If the Contractor requires more than fifteen (15) days to remedy non-compliance, it shall make a written request to the Department for a time extension. This request shall be made within the original fifteen (15) day period.
- B. If the Contractor fails to comply with the terms of these conditions, the Owner may impose the following sanctions:
 - 1. require the Contractor to provide equivalent substitute participation with SDO Certified MBEs and/or WBEs acceptable to the Owner and Department and at no additional cost to the Owner; or
 - 2. suspend any payment for the Work that should have been but was not performed by a MBE and/or WBE pursuant to the Participation Schedule.
- C. To the extent that the Contractor has not complied with the terms of these conditions, the Owner may withhold from any Certificate for Payment moneys equivalent to the product of the percentage of completion times the MBE and/or WBE dollar amount, minus the amount already paid to MBEs and/or WBEs for Work performed under the contract, minus any amounts withheld for previous non-compliance.

8. RECOURSE

- A. The Owner and the Department have the option not to impose sanctions if the Contractor demonstrates, to the satisfaction of the Department, that the Contractor has taken every possible measure to comply with Section 00.73.39. This may constitute a reason for waiving this Section in whole or in part.

- B. To demonstrate every possible measure, the Contractor shall furnish:
1. the name of each firm solicited for quotations on each Subcontract, the price quoted by each, and whether or not the firm solicited was a minority or woman-owned business;
 2. the reason for not subcontracting with a minority or woman-owned business enterprise when applicable;
 3. evidence showing efforts by the Contractor to supplement its own and SDO lists of minority and woman-owned business sources by contacting the Small Business Administration, trade organizations, the General Services Administration (U.S. Government), minority contractors' organizations, community organizations and other likely sources of names of additional minority or woman-owned business firms capable of performing the Work; and
 4. evidence showing other efforts to comply with this Section 00.73.39.

9. WAIVERS

The Department or the Supplier Diversity Office has the discretion to determine that compliance with the participation benchmarks is not feasible and may reduce or waive these benchmarks. To reduce or waive the MBE/WBE participation benchmarks the general bidders must make this request in writing to DHCD **PRIOR** to the general bid opening. **See Article 3.3 of the Instructions to Bidders.**

10. SEVERABILITY

The provisions of this section are severable, and if any of these provisions shall be held unconstitutional by any court of competent jurisdiction, the decision of such court shall not affect or impair any of the remaining provisions of the Contract.

END OF SECTION

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Form 00.73.39.01
SDO CERTIFIED MBE/WBE PARTICIPATION SCHEDULE

COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

- **This form must be submitted by the apparent low general bidder to DHCD within five working days of the receipts of bids.**
- **Letters of Intent from all MBEs or WBEs listed must be submitted with this Participation Schedule.**

Project: _____
Name of Housing Authority, Project Name and Project Number

The undersigned intends to subcontract with the following firms for the listed work and dollar amounts:

	Name of Company	Description of Work	MBE or WBE	Supplier or Subcontractor	Value of Participation
1	_____	_____	_____	_____	\$ _____
2	_____	_____	_____	_____	\$ _____
3	_____	_____	_____	_____	\$ _____
4	_____	_____	_____	_____	\$ _____
5	_____	_____	_____	_____	\$ _____
6	_____	_____	_____	_____	\$ _____
7	_____	_____	_____	_____	\$ _____
8	_____	_____	_____	_____	\$ _____

Dollar Value of MBE Commitment: \$ _____

Dollar Value of WBE Commitment: \$ _____

Total Dollar Value Commitment: \$ _____

BIDDER CERTIFICATION

The undersigned certifies under the penalties of perjury that (1) it intends to subcontract with the above listed firms for the identified work and dollar amounts unless a waiver or partial waiver has been granted by the Department and (2) certifies that he/she has read Section 00.73.39 conditions contained in the contract documents with regards to MBE/WBE participation and is authorized to bind the contractor to the commitment set forth above.

Date _____

 Name of General Contractor

 Authorized Signature

 Address

 City, State & Zip Code

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SDO CERTIFIED MBE/WBE LETTER OF INTENT
COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

- This form is provided for SDO Certified MBEs and WBEs being utilized as on this Contract.
- This form must be completed by each SDO Certified MBE or WBE and submitted by the general bidder to DHCD.
- General bidders or filed sub-bidders that are SDO Certified MBEs and WBEs may omit this form.

TO: General Bidder

From SDO Certified MBE or WBE

Name: _____
 Street Address: _____
 City/Town: _____
 Phone: _____
 Fax: _____
 Email: _____

Name: _____
 Street Address: _____
 City/Town: _____
 Phone: _____
 Fax: _____
 Email: _____

RE: Project: _____
Name of Housing Authority, Project Name and Project Number

1. My company intends to perform work in connection with the above project as:

- an individual **a corporation** **a partnership**
 a joint venture with _____
 other
(explain) _____

2. My company is certified by SDO as a **MBE** **WBE in the following categories:**

3. My company has not changed its ownership, control, or management in any ways that affect certification since obtaining SDO certification.

4. My Company understands that if your company is awarded the contract, your company intends to enter into an agreement to perform the work described below for the price indicated. My company also understands that your company will make substitutions only as allowed by Section 00.73.39 of the above project.

5. My company intends to

This work includes: Labor & Materials Labor Only Materials Only

For a total amount of _____ Dollars \$ _____

Date _____

Authorize Signature of SCE

Name and Title

Please advise DHCD immediately if either party attempts to renegotiate this agreement.

Section 00.73.43
PREVAILING WAGES and LABOR REGULATIONS
11/07/2016

1. PREVAILING WAGE RATES

- A. The rate per hour to be paid to mechanics, apprentices, teamsters, chauffeurs, and laborers employed on the Work shall not be less than the rate of wages in the attached "Minimum Wage Rates" as determined by the Commissioner of the Massachusetts Department of Labor Division of Occupational Safety. This schedule shall continue to be the minimum rate of wages for said employees during the life of this Contract. Any questions relative to the applicability of any wage rate shall be directed to the Division of Occupational Safety.
- B. Keep a legible copy of said schedule posted on the site at all times. Provide the Owner, on a weekly basis, and keep an on-site file of the wage rates and classifications of labor employed on this Work in order that they may be available for inspection by the Owner, Department, Architect, or any agency having jurisdiction.
- C. Pay reserve police officers employed on the Work the prevailing rate of wages paid to regular police officers as required by MGL c149 § 34B, as amended. Such police officers shall be covered by Worker's Compensation Insurance and Employers Liability Insurance provided by the Contractor.

2. WAGE RATE REPORTING

- A. The Contractor and all subcontractors shall provide certified payroll affidavits verifying compliance with MGL c.149 §§26 - 27H.
- B. The Contractor and all subcontractors shall provide a Statement of Compliance within 15 days of the completion of its portion of the work. This statement shall be submitted to the Owner on the form found elsewhere in this section.
- C. [Weekly Payroll Form](http://www.mass.gov/lwd/docs/dos/prevaling-wage/pw-payroll.pdf) www.mass.gov/lwd/docs/dos/prevaling-wage/pw-payroll.pdf
- D. [Statement of Compliance](http://www.mass.gov/lwd/docs/dos/prevaling-wage/pw-compliance.pdf) www.mass.gov/lwd/docs/dos/prevaling-wage/pw-compliance.pdf

3. APPRENTICE REQUIREMENTS

Apprentices employed pursuant to this determination of wage rates must be registered and approved by the State Apprenticeship Council wherever rates for journeymen or apprentices are not listed.

4. EMPLOYEE OSHA SAFETY TRAINING

- A. All employees who work on this construction site must have no less than 10 hours of OSHA-approved safety and health training. See Chapter 306 of the Acts of 2004.
- B. The Contractor and all Subcontractors shall furnish to the Owner, with the certified payroll reports, documentation indicating that each employee has successfully completed 10 hours of a course in construction safety and health. This course must be approved by the United States Occupational Health and Safety Administration (OSHA).

[SEE ATTACHED WAGE RATES OBTAINED FROM
Department of Labor, Division of Occupational Safety](#)

END OF SECTION



CHARLES D. BAKER
Governor

KARYN E. POLITO
Lt. Governor

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

Prevailing Wage Rates

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

ROSALIN ACOSTA
Secretary
MICHAEL FLANAGAN
Director

Awarding Authority: Fitchburg Housing Authority
Contract Number: **City/Town:** FITCHBURG
Description of Work: Replacement of existing heating combination boiler/water heater units and hot water air handlers with gas fired furnace and heat pump pilot study.
Job Location: Normandy Road, Fitchburg, 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 criminal penalties.
-

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>	08/01/2020	\$35.15	\$12.91	\$13.72	\$0.00	\$61.78
	12/01/2020	\$35.15	\$12.91	\$14.82	\$0.00	\$62.88
	06/01/2021	\$35.95	\$12.91	\$14.82	\$0.00	\$63.68
	08/01/2021	\$35.95	\$13.41	\$14.82	\$0.00	\$64.18
	12/01/2021	\$35.95	\$13.41	\$16.01	\$0.00	\$65.37
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2020	\$35.22	\$12.91	\$13.72	\$0.00	\$61.85
	12/01/2020	\$35.22	\$12.91	\$14.82	\$0.00	\$62.95
	06/01/2021	\$36.02	\$12.91	\$14.82	\$0.00	\$63.75
	08/01/2021	\$36.02	\$13.41	\$14.82	\$0.00	\$64.25
	12/01/2021	\$36.02	\$13.41	\$16.01	\$0.00	\$65.44
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2020	\$35.34	\$12.91	\$13.72	\$0.00	\$61.97
	12/01/2020	\$35.34	\$12.91	\$14.82	\$0.00	\$63.07
	06/01/2021	\$36.14	\$12.91	\$14.82	\$0.00	\$63.87
	08/01/2021	\$36.14	\$13.41	\$14.82	\$0.00	\$64.37
	12/01/2021	\$36.14	\$13.41	\$16.01	\$0.00	\$65.56
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$103.05	\$9.40	\$23.12	\$0.00	\$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.81	\$8.60	\$15.77	\$0.00	\$59.18
	12/01/2020	\$35.70	\$8.60	\$15.77	\$0.00	\$60.07
	06/01/2021	\$36.62	\$8.60	\$15.77	\$0.00	\$60.99
	12/01/2021	\$37.53	\$8.60	\$15.77	\$0.00	\$61.90
For apprentice rates see "Apprentice- LABORER"						
ASBESTOS WORKER (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (WORCESTER)</i>	06/01/2020	\$37.10	\$12.80	\$9.45	\$0.00	\$59.35
	12/01/2020	\$38.10	\$12.80	\$9.45	\$0.00	\$60.35
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.31	\$8.60	\$15.77	\$0.00	\$58.68
	12/01/2020	\$35.20	\$8.60	\$15.77	\$0.00	\$59.57
	06/01/2021	\$36.12	\$8.60	\$15.77	\$0.00	\$60.49
	12/01/2021	\$37.03	\$8.60	\$15.77	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$49.33	\$13.00	\$15.70	\$0.00	\$78.03
	12/01/2020	\$50.48	\$13.00	\$15.70	\$0.00	\$79.18
	06/01/2021	\$51.58	\$13.00	\$15.70	\$0.00	\$80.28
	12/01/2021	\$52.73	\$13.00	\$15.70	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$49.33	\$13.00	\$15.70	\$0.00	\$78.03
	12/01/2020	\$50.48	\$13.00	\$15.70	\$0.00	\$79.18
	06/01/2021	\$51.58	\$13.00	\$15.70	\$0.00	\$80.28
	12/01/2021	\$52.73	\$13.00	\$15.70	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.31	\$8.60	\$15.77	\$0.00	\$58.68
	12/01/2020	\$35.20	\$8.60	\$15.77	\$0.00	\$59.57
	06/01/2021	\$36.12	\$8.60	\$15.77	\$0.00	\$60.49
	12/01/2021	\$37.03	\$8.60	\$15.77	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.81	\$8.60	\$15.77	\$0.00	\$59.18
	12/01/2020	\$35.70	\$8.60	\$15.77	\$0.00	\$60.07
	06/01/2021	\$36.62	\$8.60	\$15.77	\$0.00	\$60.99
	12/01/2021	\$37.53	\$8.60	\$15.77	\$0.00	\$61.90
For apprentice rates see "Apprentice- LABORER"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2020	\$46.10	\$7.07	\$17.98	\$0.00	\$71.15

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$29.97	\$7.07	\$11.69	\$0.00	\$48.73
2	65	\$29.97	\$7.07	\$11.69	\$0.00	\$48.73
3	70	\$32.27	\$7.07	\$12.59	\$0.00	\$51.93
4	75	\$34.58	\$7.07	\$13.49	\$0.00	\$55.14
5	80	\$36.88	\$7.07	\$14.38	\$0.00	\$58.33
6	85	\$39.19	\$7.07	\$15.29	\$0.00	\$61.55
7	90	\$41.49	\$7.07	\$16.18	\$0.00	\$64.74
8	95	\$43.80	\$7.07	\$17.09	\$0.00	\$67.96

Notes:

Apprentice to Journeyworker Ratio:1:4

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (LOWELL)</i>	08/01/2020	\$53.61	\$10.75	\$21.45	\$0.00	\$85.81
	02/01/2021	\$54.21	\$10.75	\$21.45	\$0.00	\$86.41
	08/01/2021	\$55.61	\$10.75	\$21.61	\$0.00	\$87.97
	02/01/2022	\$56.19	\$10.75	\$21.61	\$0.00	\$88.55

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Lowell

Effective Date - 08/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.81	\$10.75	\$21.45	\$0.00	\$59.01
2	60	\$32.17	\$10.75	\$21.45	\$0.00	\$64.37
3	70	\$37.53	\$10.75	\$21.45	\$0.00	\$69.73
4	80	\$42.89	\$10.75	\$21.45	\$0.00	\$75.09
5	90	\$48.25	\$10.75	\$21.45	\$0.00	\$80.45

Effective Date - 02/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.11	\$10.75	\$21.45	\$0.00	\$59.31
2	60	\$32.53	\$10.75	\$21.45	\$0.00	\$64.73
3	70	\$37.95	\$10.75	\$21.45	\$0.00	\$70.15
4	80	\$43.37	\$10.75	\$21.45	\$0.00	\$75.57
5	90	\$48.79	\$10.75	\$21.45	\$0.00	\$80.99

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$48.81	\$13.00	\$15.70	\$0.00	\$77.51
	12/01/2020	\$49.95	\$13.00	\$15.70	\$0.00	\$78.65
	06/01/2021	\$51.04	\$13.00	\$15.70	\$0.00	\$79.74
	12/01/2021	\$52.18	\$13.00	\$15.70	\$0.00	\$80.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

CAISSON & UNDERPINNING BOTTOM MAN <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2020	\$40.30	\$8.60	\$17.24	\$0.00	\$66.14
	12/01/2020	\$41.28	\$8.60	\$17.24	\$0.00	\$67.12
	06/01/2021	\$42.30	\$8.60	\$17.24	\$0.00	\$68.14
	12/01/2021	\$43.31	\$8.60	\$17.24	\$0.00	\$69.15

For apprentice rates see "Apprentice- LABORER"

CAISSON & UNDERPINNING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2020	\$39.15	\$8.60	\$17.24	\$0.00	\$64.99
	12/01/2020	\$40.13	\$8.60	\$17.24	\$0.00	\$65.97
	06/01/2021	\$41.15	\$8.60	\$17.24	\$0.00	\$66.99
	12/01/2021	\$42.16	\$8.60	\$17.24	\$0.00	\$68.00

For apprentice rates see "Apprentice- LABORER"

CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2020	\$39.15	\$8.60	\$17.24	\$0.00	\$64.99
	12/01/2020	\$40.13	\$8.60	\$17.24	\$0.00	\$65.97
	06/01/2021	\$41.15	\$8.60	\$17.24	\$0.00	\$66.99
	12/01/2021	\$42.16	\$8.60	\$17.24	\$0.00	\$68.00

For apprentice rates see "Apprentice- LABORER"

CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.31	\$8.60	\$15.77	\$0.00	\$58.68
	12/01/2020	\$35.20	\$8.60	\$15.77	\$0.00	\$59.57
	06/01/2021	\$36.12	\$8.60	\$15.77	\$0.00	\$60.49
	12/01/2021	\$37.03	\$8.60	\$15.77	\$0.00	\$61.40

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARPENTER	09/01/2020	\$42.94	\$9.40	\$18.95	\$0.00	\$71.29
CARPENTERS -ZONE 2 (Eastern Massachusetts)	03/01/2021	\$43.54	\$9.40	\$18.95	\$0.00	\$71.89
	09/01/2021	\$44.19	\$9.40	\$18.95	\$0.00	\$72.54
	03/01/2022	\$44.79	\$9.40	\$18.95	\$0.00	\$73.14
	09/01/2022	\$45.44	\$9.40	\$18.95	\$0.00	\$73.79
	03/01/2023	\$46.04	\$9.40	\$18.95	\$0.00	\$74.39

Apprentice - CARPENTER - Zone 2 Eastern MA

Effective Date - 09/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.47	\$9.40	\$1.73	\$0.00	\$32.60
2	60	\$25.76	\$9.40	\$1.73	\$0.00	\$36.89
3	70	\$30.06	\$9.40	\$13.76	\$0.00	\$53.22
4	75	\$32.21	\$9.40	\$13.76	\$0.00	\$55.37
5	80	\$34.35	\$9.40	\$15.49	\$0.00	\$59.24
6	80	\$34.35	\$9.40	\$15.49	\$0.00	\$59.24
7	90	\$38.65	\$9.40	\$17.22	\$0.00	\$65.27
8	90	\$38.65	\$9.40	\$17.22	\$0.00	\$65.27

Effective Date - 03/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.77	\$9.40	\$1.73	\$0.00	\$32.90
2	60	\$26.12	\$9.40	\$1.73	\$0.00	\$37.25
3	70	\$30.48	\$9.40	\$13.76	\$0.00	\$53.64
4	75	\$32.66	\$9.40	\$13.76	\$0.00	\$55.82
5	80	\$34.83	\$9.40	\$15.49	\$0.00	\$59.72
6	80	\$34.83	\$9.40	\$15.49	\$0.00	\$59.72
7	90	\$39.19	\$9.40	\$17.22	\$0.00	\$65.81
8	90	\$39.19	\$9.40	\$17.22	\$0.00	\$65.81

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
 Step 1&2 \$30.45/ 3&4 \$36.42/ 5&6 \$54.95/ 7&8 \$60.97

Apprentice to Journeyworker Ratio:1:5

CARPENTER WOOD FRAME	04/01/2020	\$22.66	\$7.21	\$4.80	\$0.00	\$34.67
CARPENTERS-ZONE 3 (Wood Frame)	04/01/2021	\$23.16	\$7.21	\$4.80	\$0.00	\$35.17
	04/01/2022	\$23.66	\$7.21	\$4.80	\$0.00	\$35.67
	04/01/2023	\$24.16	\$7.21	\$4.80	\$0.00	\$36.17

All Aspects of New Wood Frame Work

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - CARPENTER (Wood Frame) - Zone 3

Effective Date - 04/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$13.60	\$7.21	\$0.00	\$0.00	\$20.81
2	60	\$13.60	\$7.21	\$0.00	\$0.00	\$20.81
3	65	\$14.73	\$7.21	\$0.00	\$0.00	\$21.94
4	70	\$15.86	\$7.21	\$0.00	\$0.00	\$23.07
5	75	\$17.00	\$7.21	\$3.80	\$0.00	\$28.01
6	80	\$18.13	\$7.21	\$3.80	\$0.00	\$29.14
7	85	\$19.26	\$7.21	\$3.80	\$0.00	\$30.27
8	90	\$20.39	\$7.21	\$3.80	\$0.00	\$31.40

Effective Date - 04/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$13.90	\$7.21	\$0.00	\$0.00	\$21.11
2	60	\$13.90	\$7.21	\$0.00	\$0.00	\$21.11
3	65	\$15.05	\$7.21	\$0.00	\$0.00	\$22.26
4	70	\$16.21	\$7.21	\$0.00	\$0.00	\$23.42
5	75	\$17.37	\$7.21	\$3.80	\$0.00	\$28.38
6	80	\$18.53	\$7.21	\$3.80	\$0.00	\$29.54
7	85	\$19.69	\$7.21	\$3.80	\$0.00	\$30.70
8	90	\$20.84	\$7.21	\$3.80	\$0.00	\$31.85

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
 Step 1&2 \$17.41/ 3&4 \$19.67/ 5&6 \$26.87/ 7&8 \$29.14

Apprentice to Journeyworker Ratio:1:5

CEMENT MASONRY/PLASTERING BRICKLAYERS LOCAL 3 (LOWELL)	01/01/2020	\$45.23	\$12.75	\$22.41	\$0.62	\$81.01
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Apprentice - CEMENT MASONRY/PLASTERING - Lowell

Effective Date - 01/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.62	\$12.75	\$15.41	\$0.00	\$50.78
2	60	\$27.14	\$12.75	\$17.41	\$0.62	\$57.92
3	65	\$29.40	\$12.75	\$18.41	\$0.62	\$61.18
4	70	\$31.66	\$12.75	\$19.41	\$0.62	\$64.44
5	75	\$33.92	\$12.75	\$20.41	\$0.62	\$67.70
6	80	\$36.18	\$12.75	\$21.41	\$0.62	\$70.96
7	90	\$40.71	\$12.75	\$22.41	\$0.62	\$76.49

Notes:

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

Apprentice to Journeyworker Ratio:1:3

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CHAIN SAW OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.31	\$8.60	\$15.77	\$0.00	\$58.68
	12/01/2020	\$35.20	\$8.60	\$15.77	\$0.00	\$59.57
	06/01/2021	\$36.12	\$8.60	\$15.77	\$0.00	\$60.49
	12/01/2021	\$37.03	\$8.60	\$15.77	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$50.33	\$13.00	\$15.70	\$0.00	\$79.03
	12/01/2020	\$51.48	\$13.00	\$15.70	\$0.00	\$80.18
	06/01/2021	\$52.58	\$13.00	\$15.70	\$0.00	\$81.28
	12/01/2021	\$53.73	\$13.00	\$15.70	\$0.00	\$82.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$32.72	\$13.00	\$15.70	\$0.00	\$61.42
	12/01/2020	\$33.50	\$13.00	\$15.70	\$0.00	\$62.20
	06/01/2021	\$34.25	\$13.00	\$15.70	\$0.00	\$62.95
	12/01/2021	\$35.04	\$13.00	\$15.70	\$0.00	\$63.74
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2020	\$51.51	\$8.25	\$22.40	\$0.00	\$82.16
	01/01/2021	\$52.06	\$8.25	\$22.75	\$0.00	\$83.06

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 07/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.76	\$8.25	\$0.00	\$0.00	\$34.01
2	55	\$28.33	\$8.25	\$6.05	\$0.00	\$42.63
3	60	\$30.91	\$8.25	\$6.60	\$0.00	\$45.76
4	65	\$33.48	\$8.25	\$7.15	\$0.00	\$48.88
5	70	\$36.06	\$8.25	\$19.10	\$0.00	\$63.41
6	75	\$38.63	\$8.25	\$19.65	\$0.00	\$66.53
7	80	\$41.21	\$8.25	\$20.20	\$0.00	\$69.66
8	90	\$46.36	\$8.25	\$21.30	\$0.00	\$75.91

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.03	\$8.25	\$0.00	\$0.00	\$34.28
2	55	\$28.63	\$8.25	\$6.16	\$0.00	\$43.04
3	60	\$31.24	\$8.25	\$6.72	\$0.00	\$46.21
4	65	\$33.84	\$8.25	\$7.28	\$0.00	\$49.37
5	70	\$36.44	\$8.25	\$19.39	\$0.00	\$64.08
6	75	\$39.05	\$8.25	\$19.95	\$0.00	\$67.25
7	80	\$41.65	\$8.25	\$20.51	\$0.00	\$70.41
8	90	\$46.85	\$8.25	\$21.63	\$0.00	\$76.73

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>	12/01/2019	\$39.30	\$8.10	\$16.60	\$0.00	\$64.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2019	\$40.30	\$8.10	\$16.60	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: BURNERS <i>LABORERS - ZONE 2</i>	12/01/2019	\$40.05	\$8.10	\$16.60	\$0.00	\$64.75
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 2</i>	12/01/2019	\$40.30	\$8.10	\$16.60	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2019	\$40.05	\$8.10	\$16.60	\$0.00	\$64.75
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 2</i>	12/01/2019	\$39.30	\$8.10	\$16.60	\$0.00	\$64.00
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$48.81	\$13.00	\$15.70	\$0.00	\$77.51
	12/01/2020	\$49.95	\$13.00	\$15.70	\$0.00	\$78.65
	06/01/2021	\$51.04	\$13.00	\$15.70	\$0.00	\$79.74
	12/01/2021	\$52.18	\$13.00	\$15.70	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$68.70	\$9.40	\$23.12	\$0.00	\$101.22
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$73.60	\$9.40	\$23.12	\$0.00	\$106.12
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$103.05	\$9.40	\$23.12	\$0.00	\$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) <i>DRAWBRIDGE - SEIU LOCAL 888</i>	07/01/2020	\$26.77	\$6.67	\$3.93	\$0.16	\$37.53
ELECTRICIAN <i>ELECTRICIANS LOCAL 96</i>	09/06/2020	\$44.42	\$11.13	\$17.34	\$0.00	\$72.89
	09/05/2021	\$45.01	\$11.57	\$17.42	\$0.00	\$74.00
	09/04/2022	\$45.59	\$12.20	\$17.50	\$0.00	\$75.29

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - ELECTRICIAN - Local 96

Effective Date - 09/06/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.77	\$11.13	\$0.53	\$0.00	\$29.43
2	43	\$19.10	\$11.13	\$0.57	\$0.00	\$30.80
3	48	\$21.32	\$11.13	\$14.11	\$0.00	\$46.56
4	55	\$24.43	\$11.13	\$14.54	\$0.00	\$50.10
5	65	\$28.87	\$11.13	\$15.17	\$0.00	\$55.17
6	80	\$35.54	\$11.13	\$16.10	\$0.00	\$62.77

Notes:

Steps 1-2 are 1000 hrs; Steps 3-6 are 1500 hrs.

Apprentice to Journeyworker Ratio:2:3***

ELEVATOR CONSTRUCTOR	01/01/2020	\$54.85	\$15.73	\$18.41	\$0.00	\$88.99
ELEVATOR CONSTRUCTORS LOCAL 41	01/01/2021	\$56.69	\$15.88	\$19.31	\$0.00	\$91.88
	01/01/2022	\$58.62	\$16.03	\$20.21	\$0.00	\$94.86

Apprentice - ELEVATOR CONSTRUCTOR - Local 41

Effective Date - 01/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.43	\$15.73	\$0.00	\$0.00	\$43.16
2	55	\$30.17	\$15.73	\$18.41	\$0.00	\$64.31
3	65	\$35.65	\$15.73	\$18.41	\$0.00	\$69.79
4	70	\$38.40	\$15.73	\$18.41	\$0.00	\$72.54
5	80	\$43.88	\$15.73	\$18.41	\$0.00	\$78.02

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.35	\$15.88	\$0.00	\$0.00	\$44.23
2	55	\$31.18	\$15.88	\$19.31	\$0.00	\$66.37
3	65	\$36.85	\$15.88	\$19.31	\$0.00	\$72.04
4	70	\$39.68	\$15.88	\$19.31	\$0.00	\$74.87
5	80	\$45.35	\$15.88	\$19.31	\$0.00	\$80.54

Notes:

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

Apprentice to Journeyworker Ratio:1:1

ELEVATOR CONSTRUCTOR HELPER	01/01/2020	\$38.40	\$15.73	\$18.41	\$0.00	\$72.54
ELEVATOR CONSTRUCTORS LOCAL 41	01/01/2021	\$39.68	\$15.88	\$19.31	\$0.00	\$74.87
	01/01/2022	\$41.03	\$16.03	\$20.21	\$0.00	\$77.27

For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FENCE & GUARD RAIL ERECTOR <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.31	\$8.60	\$15.77	\$0.00	\$58.68
	12/01/2020	\$35.20	\$8.60	\$15.77	\$0.00	\$59.57
	06/01/2021	\$36.12	\$8.60	\$15.77	\$0.00	\$60.49
	12/01/2021	\$37.03	\$8.60	\$15.77	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						
FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2020	\$44.73	\$12.50	\$15.70	\$0.00	\$72.93
	11/01/2020	\$45.73	\$12.50	\$15.70	\$0.00	\$73.93
	05/01/2021	\$46.88	\$12.50	\$15.70	\$0.00	\$75.08
	11/01/2021	\$47.88	\$12.50	\$15.70	\$0.00	\$76.08
	05/01/2022	\$49.03	\$12.50	\$15.70	\$0.00	\$77.23
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2020	\$46.23	\$12.50	\$15.70	\$0.00	\$74.43
	11/01/2020	\$47.24	\$12.50	\$15.70	\$0.00	\$75.44
	05/01/2021	\$48.40	\$12.50	\$15.70	\$0.00	\$76.60
	11/01/2021	\$49.41	\$12.50	\$15.70	\$0.00	\$77.61
	05/01/2022	\$50.57	\$12.50	\$15.70	\$0.00	\$78.77
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2020	\$22.64	\$12.50	\$15.70	\$0.00	\$50.84
	11/01/2020	\$23.23	\$12.50	\$15.70	\$0.00	\$51.43
	05/01/2021	\$23.91	\$12.50	\$15.70	\$0.00	\$52.11
	11/01/2021	\$24.51	\$12.50	\$15.70	\$0.00	\$52.71
	05/01/2022	\$25.18	\$12.50	\$15.70	\$0.00	\$53.38
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 96</i>	09/06/2020	\$44.42	\$11.13	\$17.34	\$0.00	\$72.89
	09/05/2021	\$45.01	\$11.57	\$17.42	\$0.00	\$74.00
	09/04/2022	\$45.59	\$12.20	\$17.50	\$0.00	\$75.29
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINT/COMMISSIONING <i>ELECTRICIANS LOCAL 96</i>	09/06/2020	\$44.42	\$11.13	\$17.34	\$0.00	\$72.89
	09/05/2021	\$45.01	\$11.57	\$17.42	\$0.00	\$74.00
	09/04/2022	\$45.59	\$12.20	\$17.50	\$0.00	\$75.29
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$40.30	\$13.00	\$15.70	\$0.00	\$69.00
	12/01/2020	\$41.25	\$13.00	\$15.70	\$0.00	\$69.95
	06/01/2021	\$42.16	\$13.00	\$15.70	\$0.00	\$70.86
	12/01/2021	\$43.11	\$13.00	\$15.70	\$0.00	\$71.81
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER <i>LABORERS - ZONE 2</i>	06/01/2020	\$23.50	\$8.60	\$15.77	\$0.00	\$47.87
	12/01/2020	\$24.50	\$8.60	\$15.77	\$0.00	\$48.87
	06/01/2021	\$24.50	\$8.60	\$15.77	\$0.00	\$48.87
	12/01/2021	\$24.50	\$8.60	\$15.77	\$0.00	\$48.87
For apprentice rates see "Apprentice- LABORER"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE II</i>	09/01/2020	\$45.48	\$9.40	\$19.25	\$0.00	\$74.13
	03/01/2021	\$46.28	\$9.40	\$19.25	\$0.00	\$74.93
	09/01/2021	\$47.08	\$9.40	\$19.25	\$0.00	\$75.73
	03/01/2022	\$47.88	\$9.40	\$19.25	\$0.00	\$76.53

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - FLOORCOVERER - Local 2168 Zone II

Effective Date - 09/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.74	\$9.40	\$1.79	\$0.00	\$33.93
2	55	\$25.01	\$9.40	\$1.79	\$0.00	\$36.20
3	60	\$27.29	\$9.40	\$13.88	\$0.00	\$50.57
4	65	\$29.56	\$9.40	\$13.88	\$0.00	\$52.84
5	70	\$31.84	\$9.40	\$15.67	\$0.00	\$56.91
6	75	\$34.11	\$9.40	\$15.67	\$0.00	\$59.18
7	80	\$36.38	\$9.40	\$17.46	\$0.00	\$63.24
8	85	\$38.66	\$9.40	\$17.46	\$0.00	\$65.52

Effective Date - 03/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.14	\$9.40	\$1.79	\$0.00	\$34.33
2	55	\$25.45	\$9.40	\$1.79	\$0.00	\$36.64
3	60	\$27.77	\$9.40	\$13.88	\$0.00	\$51.05
4	65	\$30.08	\$9.40	\$13.88	\$0.00	\$53.36
5	70	\$32.40	\$9.40	\$15.67	\$0.00	\$57.47
6	75	\$34.71	\$9.40	\$15.67	\$0.00	\$59.78
7	80	\$37.02	\$9.40	\$17.46	\$0.00	\$63.88
8	85	\$39.34	\$9.40	\$17.46	\$0.00	\$66.20

Notes: Steps are 750 hrs.
 % After 09/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)
 Step 1&2 \$31.66/ 3&4 \$37.93/ 5&6 \$56.91/ 7&8 \$63.24

Apprentice to Journeyworker Ratio:1:1

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$49.33	\$13.00	\$15.70	\$0.00	\$78.03
	12/01/2020	\$50.48	\$13.00	\$15.70	\$0.00	\$79.18
	06/01/2021	\$51.58	\$13.00	\$15.70	\$0.00	\$80.28
	12/01/2021	\$52.73	\$13.00	\$15.70	\$0.00	\$81.43

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$32.72	\$13.00	\$15.70	\$0.00	\$61.42
	12/01/2020	\$33.50	\$13.00	\$15.70	\$0.00	\$62.20
	06/01/2021	\$34.25	\$13.00	\$15.70	\$0.00	\$62.95
	12/01/2021	\$35.04	\$13.00	\$15.70	\$0.00	\$63.74

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	07/01/2020	\$41.01	\$8.25	\$22.40	\$0.00	\$71.66
	01/01/2021	\$41.56	\$8.25	\$22.75	\$0.00	\$72.56

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - GLAZIER - Local 35 Zone 2

Effective Date - 07/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.51	\$8.25	\$0.00	\$0.00	\$28.76
2	55	\$22.56	\$8.25	\$6.05	\$0.00	\$36.86
3	60	\$24.61	\$8.25	\$6.60	\$0.00	\$39.46
4	65	\$26.66	\$8.25	\$7.15	\$0.00	\$42.06
5	70	\$28.71	\$8.25	\$19.10	\$0.00	\$56.06
6	75	\$30.76	\$8.25	\$19.65	\$0.00	\$58.66
7	80	\$32.81	\$8.25	\$20.20	\$0.00	\$61.26
8	90	\$36.91	\$8.25	\$21.30	\$0.00	\$66.46

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.78	\$8.25	\$0.00	\$0.00	\$29.03
2	55	\$22.86	\$8.25	\$6.16	\$0.00	\$37.27
3	60	\$24.94	\$8.25	\$6.72	\$0.00	\$39.91
4	65	\$27.01	\$8.25	\$7.28	\$0.00	\$42.54
5	70	\$29.09	\$8.25	\$19.39	\$0.00	\$56.73
6	75	\$31.17	\$8.25	\$19.95	\$0.00	\$59.37
7	80	\$33.25	\$8.25	\$20.51	\$0.00	\$62.01
8	90	\$37.40	\$8.25	\$21.63	\$0.00	\$67.28

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

HOISTING ENGINEER/CRANES/GRADALLS	06/01/2020	\$49.33	\$13.00	\$15.70	\$0.00	\$78.03
OPERATING ENGINEERS LOCAL 4	12/01/2020	\$50.48	\$13.00	\$15.70	\$0.00	\$79.18
	06/01/2021	\$51.58	\$13.00	\$15.70	\$0.00	\$80.28
	12/01/2021	\$52.73	\$13.00	\$15.70	\$0.00	\$81.43

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - OPERATING ENGINEERS - Local 4

Effective Date - 06/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$27.13	\$13.00	\$0.00	\$0.00	\$40.13
2	60	\$29.60	\$13.00	\$15.70	\$0.00	\$58.30
3	65	\$32.06	\$13.00	\$15.70	\$0.00	\$60.76
4	70	\$34.53	\$13.00	\$15.70	\$0.00	\$63.23
5	75	\$37.00	\$13.00	\$15.70	\$0.00	\$65.70
6	80	\$39.46	\$13.00	\$15.70	\$0.00	\$68.16
7	85	\$41.93	\$13.00	\$15.70	\$0.00	\$70.63
8	90	\$44.40	\$13.00	\$15.70	\$0.00	\$73.10

Effective Date - 12/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$27.76	\$13.00	\$0.00	\$0.00	\$40.76
2	60	\$30.29	\$13.00	\$15.70	\$0.00	\$58.99
3	65	\$32.81	\$13.00	\$15.70	\$0.00	\$61.51
4	70	\$35.34	\$13.00	\$15.70	\$0.00	\$64.04
5	75	\$37.86	\$13.00	\$15.70	\$0.00	\$66.56
6	80	\$40.38	\$13.00	\$15.70	\$0.00	\$69.08
7	85	\$42.91	\$13.00	\$15.70	\$0.00	\$71.61
8	90	\$45.43	\$13.00	\$15.70	\$0.00	\$74.13

Notes:

Apprentice to Journeyworker Ratio:1:6

HVAC (DUCTWORK) SHEETMETAL WORKERS LOCAL 63	01/01/2020	\$36.99	\$10.64	\$16.22	\$1.77	\$65.62
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For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS) ELECTRICIANS LOCAL 96	09/06/2020	\$44.42	\$11.13	\$17.34	\$0.00	\$72.89
	09/05/2021	\$45.01	\$11.57	\$17.42	\$0.00	\$74.00
	09/04/2022	\$45.59	\$12.20	\$17.50	\$0.00	\$75.29

For apprentice rates see "Apprentice- ELECTRICIAN"

HVAC (TESTING AND BALANCING - AIR) SHEETMETAL WORKERS LOCAL 63	01/01/2020	\$36.99	\$10.64	\$16.22	\$1.77	\$65.62
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For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (TESTING AND BALANCING -WATER) PLUMBERS LOCAL 4	09/01/2020	\$46.91	\$9.80	\$15.71	\$0.00	\$72.42
	03/01/2021	\$47.91	\$9.80	\$15.71	\$0.00	\$73.42
	09/01/2021	\$48.91	\$9.80	\$15.71	\$0.00	\$74.42
	03/01/2022	\$49.91	\$9.80	\$15.71	\$0.00	\$75.42

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

HVAC MECHANIC PLUMBERS LOCAL 4	09/01/2020	\$46.91	\$9.80	\$15.71	\$0.00	\$72.42
	03/01/2021	\$47.91	\$9.80	\$15.71	\$0.00	\$73.42
	09/01/2021	\$48.91	\$9.80	\$15.71	\$0.00	\$74.42
	03/01/2022	\$49.91	\$9.80	\$15.71	\$0.00	\$75.42

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS LABORERS - ZONE 2	06/01/2020	\$34.81	\$8.60	\$15.77	\$0.00	\$59.18
	12/01/2020	\$35.70	\$8.60	\$15.77	\$0.00	\$60.07
	06/01/2021	\$36.62	\$8.60	\$15.77	\$0.00	\$60.99
	12/01/2021	\$37.53	\$8.60	\$15.77	\$0.00	\$61.90

For apprentice rates see "Apprentice- LABORER"						
INSULATOR (PIPES & TANKS) HEAT & FROST INSULATORS LOCAL 6 (WORCESTER)	09/01/2020	\$44.10	\$13.80	\$17.14	\$0.00	\$75.04
	09/01/2021	\$46.50	\$13.80	\$17.14	\$0.00	\$77.44
	09/01/2022	\$48.95	\$13.80	\$17.14	\$0.00	\$79.89

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

Effective Date - 09/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.05	\$13.80	\$12.42	\$0.00	\$48.27
2	60	\$26.46	\$13.80	\$13.36	\$0.00	\$53.62
3	70	\$30.87	\$13.80	\$14.31	\$0.00	\$58.98
4	80	\$35.28	\$13.80	\$15.25	\$0.00	\$64.33

Effective Date - 09/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.25	\$13.80	\$12.42	\$0.00	\$49.47
2	60	\$27.90	\$13.80	\$13.36	\$0.00	\$55.06
3	70	\$32.55	\$13.80	\$14.31	\$0.00	\$60.66
4	80	\$37.20	\$13.80	\$15.25	\$0.00	\$66.25

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER IRONWORKERS LOCAL 7 (WORCESTER AREA)	03/16/2019	\$46.36	\$8.00	\$23.50	\$0.00	\$77.86
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Apprentice - IRONWORKER - Local 7 Worcester

Effective Date - 03/16/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$27.82	\$8.00	\$23.50	\$0.00	\$59.32
2	70	\$32.45	\$8.00	\$23.50	\$0.00	\$63.95
3	75	\$34.77	\$8.00	\$23.50	\$0.00	\$66.27
4	80	\$37.09	\$8.00	\$23.50	\$0.00	\$68.59
5	85	\$39.41	\$8.00	\$23.50	\$0.00	\$70.91
6	90	\$41.72	\$8.00	\$23.50	\$0.00	\$73.22

Notes:

Structural 1:6; Ornamental 1:4

Apprentice to Journeyworker Ratio:

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
JACKHAMMER & PAVING BREAKER OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.31	\$8.60	\$15.77	\$0.00	\$58.68
	12/01/2020	\$35.20	\$8.60	\$15.77	\$0.00	\$59.57
	06/01/2021	\$36.12	\$8.60	\$15.77	\$0.00	\$60.49
	12/01/2021	\$37.03	\$8.60	\$15.77	\$0.00	\$61.40

For apprentice rates see "Apprentice- LABORER"

LABORER <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.06	\$8.60	\$15.77	\$0.00	\$58.43
	12/01/2020	\$34.95	\$8.60	\$15.77	\$0.00	\$59.32
	06/01/2021	\$35.87	\$8.60	\$15.77	\$0.00	\$60.24
	12/01/2021	\$36.78	\$8.60	\$15.77	\$0.00	\$61.15

Apprentice - LABORER - Zone 2

Effective Date - 06/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$20.44	\$8.60	\$15.77	\$0.00	\$44.81
2	70	\$23.84	\$8.60	\$15.77	\$0.00	\$48.21
3	80	\$27.25	\$8.60	\$15.77	\$0.00	\$51.62
4	90	\$30.65	\$8.60	\$15.77	\$0.00	\$55.02

Effective Date - 12/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$20.97	\$8.60	\$15.77	\$0.00	\$45.34
2	70	\$24.47	\$8.60	\$15.77	\$0.00	\$48.84
3	80	\$27.96	\$8.60	\$15.77	\$0.00	\$52.33
4	90	\$31.46	\$8.60	\$15.77	\$0.00	\$55.83

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER: CARPENTER TENDER <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.06	\$8.60	\$15.77	\$0.00	\$58.43
	12/01/2020	\$34.95	\$8.60	\$15.77	\$0.00	\$59.32
	06/01/2021	\$35.87	\$8.60	\$15.77	\$0.00	\$60.24
	12/01/2021	\$36.78	\$8.60	\$15.77	\$0.00	\$61.15

For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.06	\$8.60	\$15.77	\$0.00	\$58.43
	12/01/2020	\$34.95	\$8.60	\$15.77	\$0.00	\$59.32
	06/01/2021	\$35.87	\$8.60	\$15.77	\$0.00	\$60.24
	12/01/2021	\$36.78	\$8.60	\$15.77	\$0.00	\$61.15

For apprentice rates see "Apprentice- LABORER"

LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.15	\$8.60	\$15.83	\$0.00	\$58.58
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For apprentice rates see "Apprentice- LABORER"

LABORER: MASON TENDER <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.31	\$8.60	\$15.77	\$0.00	\$58.68
	12/01/2020	\$35.20	\$8.60	\$15.77	\$0.00	\$59.57
	06/01/2021	\$36.12	\$8.60	\$15.77	\$0.00	\$60.49
	12/01/2021	\$37.03	\$8.60	\$15.77	\$0.00	\$61.40

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.06	\$8.60	\$15.77	\$0.00	\$58.43
	12/01/2020	\$34.95	\$8.60	\$15.77	\$0.00	\$59.32
	06/01/2021	\$35.87	\$8.60	\$15.77	\$0.00	\$60.24
	12/01/2021	\$36.78	\$8.60	\$15.77	\$0.00	\$61.15
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.06	\$8.60	\$15.77	\$0.00	\$58.43
	12/01/2020	\$34.95	\$8.60	\$15.77	\$0.00	\$59.32
	06/01/2021	\$35.87	\$8.60	\$15.77	\$0.00	\$60.24
	12/01/2021	\$36.78	\$8.60	\$15.77	\$0.00	\$61.15
This classification applies to the removal of standing trees, and the trimming and removal of branches and limbs when related to public works construction or site clearance incidental to construction . For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.31	\$8.60	\$15.77	\$0.00	\$58.68
	12/01/2020	\$35.20	\$8.60	\$15.77	\$0.00	\$59.57
	06/01/2021	\$36.12	\$8.60	\$15.77	\$0.00	\$60.49
	12/01/2021	\$37.03	\$8.60	\$15.77	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2020	\$42.57	\$10.75	\$20.27	\$0.00	\$73.59
	02/01/2021	\$43.08	\$10.75	\$20.27	\$0.00	\$74.10
	08/01/2021	\$44.20	\$10.75	\$20.43	\$0.00	\$75.38
	02/01/2022	\$44.67	\$10.75	\$20.43	\$0.00	\$75.85

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

Effective Date - 08/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.29	\$10.75	\$20.27	\$0.00	\$52.31
2	60	\$25.54	\$10.75	\$20.27	\$0.00	\$56.56
3	70	\$29.80	\$10.75	\$20.27	\$0.00	\$60.82
4	80	\$34.06	\$10.75	\$20.27	\$0.00	\$65.08
5	90	\$38.31	\$10.75	\$20.27	\$0.00	\$69.33

Effective Date - 02/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.54	\$10.75	\$20.27	\$0.00	\$52.56
2	60	\$25.85	\$10.75	\$20.27	\$0.00	\$56.87
3	70	\$30.16	\$10.75	\$20.27	\$0.00	\$61.18
4	80	\$34.46	\$10.75	\$20.27	\$0.00	\$65.48
5	90	\$38.77	\$10.75	\$20.27	\$0.00	\$69.79

Notes:

Apprentice to Journeyworker Ratio:1:3

MARBLE MASONS, TILELAYERS & TERRAZZO MECH <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2020	\$55.77	\$10.75	\$22.08	\$0.00	\$88.60
	02/01/2021	\$56.41	\$10.75	\$22.08	\$0.00	\$89.24
	08/01/2021	\$57.81	\$10.75	\$22.24	\$0.00	\$90.80
	02/01/2022	\$58.38	\$10.75	\$22.24	\$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 - 08/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.89	\$10.75	\$22.08	\$0.00	\$60.72
2	60	\$33.46	\$10.75	\$22.08	\$0.00	\$66.29
3	70	\$39.04	\$10.75	\$22.08	\$0.00	\$71.87
4	80	\$44.62	\$10.75	\$22.08	\$0.00	\$77.45
5	90	\$50.19	\$10.75	\$22.08	\$0.00	\$83.02

Effective Date - 02/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.21	\$10.75	\$22.08	\$0.00	\$61.04
2	60	\$33.85	\$10.75	\$22.08	\$0.00	\$66.68
3	70	\$39.49	\$10.75	\$22.08	\$0.00	\$72.32
4	80	\$45.13	\$10.75	\$22.08	\$0.00	\$77.96
5	90	\$50.77	\$10.75	\$22.08	\$0.00	\$83.60

Notes:

Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$48.81	\$13.00	\$15.70	\$0.00	\$77.51
	12/01/2020	\$49.95	\$13.00	\$15.70	\$0.00	\$78.65
	06/01/2021	\$51.04	\$13.00	\$15.70	\$0.00	\$79.74
	12/01/2021	\$52.18	\$13.00	\$15.70	\$0.00	\$80.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$48.81	\$13.00	\$15.70	\$0.00	\$77.51
	12/01/2020	\$49.95	\$13.00	\$15.70	\$0.00	\$78.65
	06/01/2021	\$51.04	\$13.00	\$15.70	\$0.00	\$79.74
	12/01/2021	\$52.18	\$13.00	\$15.70	\$0.00	\$80.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 3) <i>MILLWRIGHTS LOCAL 1121 - Zone 3</i>	04/01/2019	\$37.11	\$9.90	\$18.50	\$0.00	\$65.51
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Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - MILLWRIGHT - Local 1121 Zone 3

Effective Date - 04/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$20.41	\$9.90	\$5.31	\$0.00	\$35.62
2	65	\$24.12	\$9.90	\$15.13	\$0.00	\$49.15
3	75	\$27.83	\$9.90	\$16.10	\$0.00	\$53.83
4	85	\$31.54	\$9.90	\$17.06	\$0.00	\$58.50

Notes:

Steps are 2,000 hours

Apprentice to Journeyworker Ratio:1:5

MORTAR MIXER	06/01/2020	\$34.31	\$8.60	\$15.77	\$0.00	\$58.68
<i>LABORERS - ZONE 2</i>	12/01/2020	\$35.20	\$8.60	\$15.77	\$0.00	\$59.57
	06/01/2021	\$36.12	\$8.60	\$15.77	\$0.00	\$60.49
	12/01/2021	\$37.03	\$8.60	\$15.77	\$0.00	\$61.40

For apprentice rates see "Apprentice- LABORER"

OILER (OTHER THAN TRUCK CRANES,GRADALLS)	06/01/2020	\$23.13	\$13.00	\$15.70	\$0.00	\$51.83
<i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2020	\$23.70	\$13.00	\$15.70	\$0.00	\$52.40
	06/01/2021	\$24.25	\$13.00	\$15.70	\$0.00	\$52.95
	12/01/2021	\$24.83	\$13.00	\$15.70	\$0.00	\$53.53

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OILER (TRUCK CRANES, GRADALLS)	06/01/2020	\$27.79	\$13.00	\$15.70	\$0.00	\$56.49
<i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2020	\$28.47	\$13.00	\$15.70	\$0.00	\$57.17
	06/01/2021	\$29.11	\$13.00	\$15.70	\$0.00	\$57.81
	12/01/2021	\$29.79	\$13.00	\$15.70	\$0.00	\$58.49

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OTHER POWER DRIVEN EQUIPMENT - CLASS II	06/01/2020	\$48.81	\$13.00	\$15.70	\$0.00	\$77.51
<i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2020	\$49.95	\$13.00	\$15.70	\$0.00	\$78.65
	06/01/2021	\$51.04	\$13.00	\$15.70	\$0.00	\$79.74
	12/01/2021	\$52.18	\$13.00	\$15.70	\$0.00	\$80.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

PAINTER (BRIDGES/TANKS)	07/01/2020	\$51.51	\$8.25	\$22.40	\$0.00	\$82.16
<i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2021	\$52.06	\$8.25	\$22.75	\$0.00	\$83.06

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 07/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.76	\$8.25	\$0.00	\$0.00	\$34.01
2	55	\$28.33	\$8.25	\$6.05	\$0.00	\$42.63
3	60	\$30.91	\$8.25	\$6.60	\$0.00	\$45.76
4	65	\$33.48	\$8.25	\$7.15	\$0.00	\$48.88
5	70	\$36.06	\$8.25	\$19.10	\$0.00	\$63.41
6	75	\$38.63	\$8.25	\$19.65	\$0.00	\$66.53
7	80	\$41.21	\$8.25	\$20.20	\$0.00	\$69.66
8	90	\$46.36	\$8.25	\$21.30	\$0.00	\$75.91

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.03	\$8.25	\$0.00	\$0.00	\$34.28
2	55	\$28.63	\$8.25	\$6.16	\$0.00	\$43.04
3	60	\$31.24	\$8.25	\$6.72	\$0.00	\$46.21
4	65	\$33.84	\$8.25	\$7.28	\$0.00	\$49.37
5	70	\$36.44	\$8.25	\$19.39	\$0.00	\$64.08
6	75	\$39.05	\$8.25	\$19.95	\$0.00	\$67.25
7	80	\$41.65	\$8.25	\$20.51	\$0.00	\$70.41
8	90	\$46.85	\$8.25	\$21.63	\$0.00	\$76.73

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *	07/01/2020	\$41.21	\$8.25	\$22.40	\$0.00	\$71.86
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	01/01/2021	\$42.96	\$8.25	\$22.75	\$0.00	\$73.96

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

Effective Date - 07/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.61	\$8.25	\$0.00	\$0.00	\$28.86
2	55	\$22.67	\$8.25	\$6.05	\$0.00	\$36.97
3	60	\$24.73	\$8.25	\$6.60	\$0.00	\$39.58
4	65	\$26.79	\$8.25	\$7.15	\$0.00	\$42.19
5	70	\$28.85	\$8.25	\$19.10	\$0.00	\$56.20
6	75	\$30.91	\$8.25	\$19.65	\$0.00	\$58.81
7	80	\$32.97	\$8.25	\$20.20	\$0.00	\$61.42
8	90	\$37.09	\$8.25	\$21.30	\$0.00	\$66.64

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.48	\$8.25	\$0.00	\$0.00	\$29.73
2	55	\$23.63	\$8.25	\$6.16	\$0.00	\$38.04
3	60	\$25.78	\$8.25	\$6.72	\$0.00	\$40.75
4	65	\$27.92	\$8.25	\$7.28	\$0.00	\$43.45
5	70	\$30.07	\$8.25	\$19.39	\$0.00	\$57.71
6	75	\$32.22	\$8.25	\$19.95	\$0.00	\$60.42
7	80	\$34.37	\$8.25	\$20.51	\$0.00	\$63.13
8	90	\$38.66	\$8.25	\$21.63	\$0.00	\$68.54

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT)	07/01/2020	\$40.47	\$8.25	\$22.40	\$0.00	\$71.12
PAINTERS LOCAL 35 - ZONE 2	01/01/2021	\$41.02	\$8.25	\$22.75	\$0.00	\$72.02

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

Effective Date - 07/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.24	\$8.25	\$0.00	\$0.00	\$28.49
2	55	\$22.26	\$8.25	\$6.05	\$0.00	\$36.56
3	60	\$24.28	\$8.25	\$6.60	\$0.00	\$39.13
4	65	\$26.31	\$8.25	\$7.15	\$0.00	\$41.71
5	70	\$28.33	\$8.25	\$19.10	\$0.00	\$55.68
6	75	\$30.35	\$8.25	\$19.65	\$0.00	\$58.25
7	80	\$32.38	\$8.25	\$20.20	\$0.00	\$60.83
8	90	\$36.42	\$8.25	\$21.30	\$0.00	\$65.97

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.51	\$8.25	\$0.00	\$0.00	\$28.76
2	55	\$22.56	\$8.25	\$6.16	\$0.00	\$36.97
3	60	\$24.61	\$8.25	\$6.72	\$0.00	\$39.58
4	65	\$26.66	\$8.25	\$7.28	\$0.00	\$42.19
5	70	\$28.71	\$8.25	\$19.39	\$0.00	\$56.35
6	75	\$30.77	\$8.25	\$19.95	\$0.00	\$58.97
7	80	\$32.82	\$8.25	\$20.51	\$0.00	\$61.58
8	90	\$36.92	\$8.25	\$21.63	\$0.00	\$66.80

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (TRAFFIC MARKINGS) LABORERS - ZONE 2	06/01/2020	\$34.06	\$8.60	\$15.77	\$0.00	\$58.43
	12/01/2020	\$34.95	\$8.60	\$15.77	\$0.00	\$59.32
	06/01/2021	\$35.87	\$8.60	\$15.77	\$0.00	\$60.24
	12/01/2021	\$36.78	\$8.60	\$15.77	\$0.00	\$61.15

For Apprentice rates see "Apprentice- LABORER"

PAINTER / TAPER (BRUSH, NEW) *	07/01/2020	\$41.01	\$8.25	\$22.40	\$0.00	\$71.66
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	01/01/2021	\$41.56	\$8.25	\$22.75	\$0.00	\$72.56

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW

Effective Date - 07/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.51	\$8.25	\$0.00	\$0.00	\$28.76
2	55	\$22.56	\$8.25	\$6.05	\$0.00	\$36.86
3	60	\$24.61	\$8.25	\$6.60	\$0.00	\$39.46
4	65	\$26.66	\$8.25	\$7.15	\$0.00	\$42.06
5	70	\$28.71	\$8.25	\$19.10	\$0.00	\$56.06
6	75	\$30.76	\$8.25	\$19.65	\$0.00	\$58.66
7	80	\$32.81	\$8.25	\$20.20	\$0.00	\$61.26
8	90	\$36.91	\$8.25	\$21.30	\$0.00	\$66.46

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.78	\$8.25	\$0.00	\$0.00	\$29.03
2	55	\$22.86	\$8.25	\$6.16	\$0.00	\$37.27
3	60	\$24.94	\$8.25	\$6.72	\$0.00	\$39.91
4	65	\$27.01	\$8.25	\$7.28	\$0.00	\$42.54
5	70	\$29.09	\$8.25	\$19.39	\$0.00	\$56.73
6	75	\$31.17	\$8.25	\$19.95	\$0.00	\$59.37
7	80	\$33.25	\$8.25	\$20.51	\$0.00	\$62.01
8	90	\$37.40	\$8.25	\$21.63	\$0.00	\$67.28

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)	07/01/2020	\$39.07	\$8.25	\$22.40	\$0.00	\$69.72
PAINTERS LOCAL 35 - ZONE 2	01/01/2021	\$39.62	\$8.25	\$22.75	\$0.00	\$70.62

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT

Effective Date - 07/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.54	\$8.25	\$0.00	\$0.00	\$27.79
2	55	\$21.49	\$8.25	\$6.05	\$0.00	\$35.79
3	60	\$23.44	\$8.25	\$6.60	\$0.00	\$38.29
4	65	\$25.40	\$8.25	\$7.15	\$0.00	\$40.80
5	70	\$27.35	\$8.25	\$19.10	\$0.00	\$54.70
6	75	\$29.30	\$8.25	\$19.65	\$0.00	\$57.20
7	80	\$31.26	\$8.25	\$20.20	\$0.00	\$59.71
8	90	\$35.16	\$8.25	\$21.30	\$0.00	\$64.71

Effective Date - 01/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.81	\$8.25	\$0.00	\$0.00	\$28.06
2	55	\$21.79	\$8.25	\$6.16	\$0.00	\$36.20
3	60	\$23.77	\$8.25	\$6.72	\$0.00	\$38.74
4	65	\$25.75	\$8.25	\$7.28	\$0.00	\$41.28
5	70	\$27.73	\$8.25	\$19.39	\$0.00	\$55.37
6	75	\$29.72	\$8.25	\$19.95	\$0.00	\$57.92
7	80	\$31.70	\$8.25	\$20.51	\$0.00	\$60.46
8	90	\$35.66	\$8.25	\$21.63	\$0.00	\$65.54

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PANEL & PICKUP TRUCKS DRIVER <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2020	\$34.98	\$12.91	\$13.72	\$0.00	\$61.61
	12/01/2020	\$34.98	\$12.91	\$14.82	\$0.00	\$62.71
	06/01/2021	\$35.78	\$12.91	\$14.82	\$0.00	\$63.51
	08/01/2021	\$35.78	\$13.41	\$14.82	\$0.00	\$64.01
	12/01/2021	\$35.78	\$13.41	\$16.01	\$0.00	\$65.20
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i> For apprentice rates see "Apprentice- PILE DRIVER"	08/01/2020	\$46.11	\$9.40	\$23.12	\$0.00	\$78.63
PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$46.11	\$9.40	\$23.12	\$0.00	\$78.63

Apprentice - PILE DRIVER - Local 56 Zone 2

Effective Date - 08/01/2020

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\$57.06/2\$61.96/3\$66.87/4\$69.32/5\$71.78/6\$71.78/7\$76.68/8\$76.68

Apprentice to Journeyworker Ratio:1:5

PIPELAYER <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.31	\$8.60	\$15.77	\$0.00	\$58.68
	12/01/2020	\$35.20	\$8.60	\$15.77	\$0.00	\$59.57
	06/01/2021	\$36.12	\$8.60	\$15.77	\$0.00	\$60.49
	12/01/2021	\$37.03	\$8.60	\$15.77	\$0.00	\$61.40

For apprentice rates see "Apprentice- LABORER"

PLUMBER & PIPEFITTER <i>PLUMBERS LOCAL 4</i>	09/01/2020	\$46.91	\$9.80	\$15.71	\$0.00	\$72.42
	03/01/2021	\$47.91	\$9.80	\$15.71	\$0.00	\$73.42
	09/01/2021	\$48.91	\$9.80	\$15.71	\$0.00	\$74.42
	03/01/2022	\$49.91	\$9.80	\$15.71	\$0.00	\$75.42

Apprentice - PLUMBER/PIPEFITTER - Local 4

Effective Date - 09/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.76	\$9.80	\$0.00	\$0.00	\$28.56
2	50	\$23.46	\$9.80	\$0.00	\$0.00	\$33.26
3	60	\$28.15	\$9.80	\$0.00	\$0.00	\$37.95
4	70	\$32.84	\$9.80	\$6.00	\$0.00	\$48.64
5	80	\$37.53	\$9.80	\$6.00	\$0.00	\$53.33

Effective Date - 03/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$19.16	\$9.80	\$0.00	\$0.00	\$28.96
2	50	\$23.96	\$9.80	\$0.00	\$0.00	\$33.76
3	60	\$28.75	\$9.80	\$0.00	\$0.00	\$38.55
4	70	\$33.54	\$9.80	\$6.00	\$0.00	\$49.34
5	80	\$38.33	\$9.80	\$6.00	\$0.00	\$54.13

Notes:
 Steps - 2000 hrs; Step 4 w/lic 75%, Step 5 w/lic 85%
 Step 4 w/lic \$50.98, Step 5 w/lic \$55.67

Apprentice to Journeyworker Ratio:1:3

PNEUMATIC CONTROLS (TEMP.) <i>PLUMBERS LOCAL 4</i>	09/01/2020	\$46.91	\$9.80	\$15.71	\$0.00	\$72.42
	03/01/2021	\$47.91	\$9.80	\$15.71	\$0.00	\$73.42
	09/01/2021	\$48.91	\$9.80	\$15.71	\$0.00	\$74.42
	03/01/2022	\$49.91	\$9.80	\$15.71	\$0.00	\$75.42

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.31	\$8.60	\$15.77	\$0.00	\$58.68
	12/01/2020	\$35.20	\$8.60	\$15.77	\$0.00	\$59.57
	06/01/2021	\$36.12	\$8.60	\$15.77	\$0.00	\$60.49
	12/01/2021	\$37.03	\$8.60	\$15.77	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						
POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	06/01/2020	\$35.06	\$8.60	\$15.77	\$0.00	\$59.43
	12/01/2020	\$35.95	\$8.60	\$15.77	\$0.00	\$60.32
	06/01/2021	\$36.87	\$8.60	\$15.77	\$0.00	\$61.24
	12/01/2021	\$37.78	\$8.60	\$15.77	\$0.00	\$62.15
For apprentice rates see "Apprentice- LABORER"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$49.33	\$13.00	\$15.70	\$0.00	\$78.03
	12/01/2020	\$50.48	\$13.00	\$15.70	\$0.00	\$79.18
	06/01/2021	\$51.58	\$13.00	\$15.70	\$0.00	\$80.28
	12/01/2021	\$52.73	\$13.00	\$15.70	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$49.33	\$13.00	\$15.70	\$0.00	\$78.03
	12/01/2020	\$50.48	\$13.00	\$15.70	\$0.00	\$79.18
	06/01/2021	\$51.58	\$13.00	\$15.70	\$0.00	\$80.28
	12/01/2021	\$52.73	\$13.00	\$15.70	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$32.72	\$13.00	\$15.70	\$0.00	\$61.42
	12/01/2020	\$33.50	\$13.00	\$15.70	\$0.00	\$62.20
	06/01/2021	\$34.25	\$13.00	\$15.70	\$0.00	\$62.95
	12/01/2021	\$35.04	\$13.00	\$15.70	\$0.00	\$63.74
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 170 -J.G.MacLellan (Lunenburg)</i>	01/01/2020	\$24.64	\$9.65	\$8.00	\$0.00	\$42.29
	01/01/2021	\$24.64	\$10.01	\$8.00	\$0.00	\$42.65
	02/02/2021	\$24.84	\$10.01	\$8.00	\$0.00	\$42.85
	01/01/2022	\$24.84	\$10.37	\$8.00	\$0.00	\$43.21
	02/02/2022	\$25.04	\$10.37	\$8.00	\$0.00	\$43.41
	01/01/2023	\$25.04	\$10.77	\$8.00	\$0.00	\$43.81
	02/02/2023	\$25.29	\$10.77	\$8.00	\$0.00	\$44.06
	01/01/2024	\$25.29	\$11.17	\$0.00	\$0.00	\$36.46
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$48.81	\$13.00	\$15.70	\$0.00	\$77.51
	12/01/2020	\$49.95	\$13.00	\$15.70	\$0.00	\$78.65
	06/01/2021	\$51.04	\$13.00	\$15.70	\$0.00	\$79.74
	12/01/2021	\$52.18	\$13.00	\$15.70	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.31	\$8.60	\$15.77	\$0.00	\$58.68
	12/01/2020	\$35.20	\$8.60	\$15.77	\$0.00	\$59.57
	06/01/2021	\$36.12	\$8.60	\$15.77	\$0.00	\$60.49
	12/01/2021	\$37.03	\$8.60	\$15.77	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$48.81	\$13.00	\$15.70	\$0.00	\$77.51
	12/01/2020	\$49.95	\$13.00	\$15.70	\$0.00	\$78.65
	06/01/2021	\$51.04	\$13.00	\$15.70	\$0.00	\$79.74
	12/01/2021	\$52.18	\$13.00	\$15.70	\$0.00	\$80.88

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROOFER (Inc.Roofing Waterproofing &Roofing Damproofg) ROOFERS LOCAL 33	08/01/2020	\$46.60	\$11.75	\$16.15	\$0.00	\$74.50
	02/01/2021	\$48.03	\$11.75	\$16.15	\$0.00	\$75.93
	08/01/2021	\$49.46	\$11.75	\$16.15	\$0.00	\$77.36
	02/01/2022	\$50.89	\$11.75	\$16.15	\$0.00	\$78.79

Apprentice - ROOFER - Local 33

Effective Date - 08/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.30	\$11.75	\$3.81	\$0.00	\$38.86
2	60	\$27.96	\$11.75	\$16.15	\$0.00	\$55.86
3	65	\$30.29	\$11.75	\$16.15	\$0.00	\$58.19
4	75	\$34.95	\$11.75	\$16.15	\$0.00	\$62.85
5	85	\$39.61	\$11.75	\$16.15	\$0.00	\$67.51

Effective Date - 02/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.02	\$11.75	\$3.81	\$0.00	\$39.58
2	60	\$28.82	\$11.75	\$16.15	\$0.00	\$56.72
3	65	\$31.22	\$11.75	\$16.15	\$0.00	\$59.12
4	75	\$36.02	\$11.75	\$16.15	\$0.00	\$63.92
5	85	\$40.83	\$11.75	\$16.15	\$0.00	\$68.73

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 ROOFERS LOCAL 33	08/01/2020	\$46.85	\$11.75	\$16.15	\$0.00	\$74.75
	02/01/2021	\$48.28	\$11.75	\$16.15	\$0.00	\$76.18
	08/01/2021	\$49.71	\$11.75	\$16.15	\$0.00	\$77.61
	02/01/2022	\$51.14	\$11.75	\$16.15	\$0.00	\$79.04

For apprentice rates see "Apprentice- ROOFER"

SHEETMETAL WORKER SHEETMETAL WORKERS LOCAL 63	01/01/2020	\$36.99	\$10.64	\$16.22	\$1.77	\$65.62
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Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SHEET METAL WORKER - Local 63

Effective Date - 01/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$16.65	\$6.21	\$4.67	\$0.00	\$27.53
2	50	\$18.50	\$6.55	\$5.19	\$0.00	\$30.24
3	55	\$20.34	\$6.88	\$9.33	\$1.08	\$37.63
4	60	\$22.19	\$7.22	\$9.33	\$1.14	\$39.88
5	65	\$24.04	\$7.55	\$9.33	\$1.20	\$42.12
6	70	\$25.89	\$7.88	\$9.33	\$1.27	\$44.37
7	75	\$27.74	\$8.22	\$9.33	\$1.33	\$46.62
8	80	\$29.59	\$9.30	\$15.18	\$1.59	\$55.66
9	85	\$31.44	\$9.64	\$15.18	\$1.66	\$57.92
10	90	\$33.29	\$9.98	\$15.18	\$1.72	\$60.17

Notes:

Apprentice to Journeyworker Ratio:1:3

SPECIALIZED EARTH MOVING EQUIP < 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2020	\$35.44	\$12.91	\$13.72	\$0.00	\$62.07
	12/01/2020	\$35.44	\$12.91	\$14.82	\$0.00	\$63.17
	06/01/2021	\$36.24	\$12.91	\$14.82	\$0.00	\$63.97
	08/01/2021	\$36.24	\$13.41	\$14.82	\$0.00	\$64.47
	12/01/2021	\$36.24	\$13.41	\$16.01	\$0.00	\$65.66
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2020	\$35.73	\$12.91	\$13.72	\$0.00	\$62.36
	12/01/2020	\$35.73	\$12.91	\$14.82	\$0.00	\$63.46
	06/01/2021	\$36.53	\$12.91	\$14.82	\$0.00	\$64.26
	08/01/2021	\$36.53	\$13.41	\$14.82	\$0.00	\$64.76
	12/01/2021	\$36.53	\$13.41	\$16.01	\$0.00	\$65.95
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 669</i>	01/01/2019	\$41.51	\$10.02	\$13.08	\$0.00	\$64.61

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SPRINKLER FITTER - Local 669

Effective Date - 01/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$18.68	\$7.75	\$0.00	\$0.00	\$26.43
2	50	\$20.76	\$7.75	\$0.00	\$0.00	\$28.51
3	55	\$22.83	\$10.02	\$7.25	\$0.00	\$40.10
4	60	\$24.91	\$10.02	\$7.25	\$0.00	\$42.18
5	65	\$26.98	\$10.02	\$7.50	\$0.00	\$44.50
6	70	\$29.06	\$10.02	\$7.50	\$0.00	\$46.58
7	75	\$31.13	\$10.02	\$7.50	\$0.00	\$48.65
8	80	\$33.21	\$10.02	\$7.50	\$0.00	\$50.73
9	85	\$35.28	\$10.02	\$7.50	\$0.00	\$52.80
10	90	\$37.36	\$10.02	\$7.50	\$0.00	\$54.88

Notes:

Apprentice to Journeyworker Ratio:1:1

STEAM BOILER OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$48.81	\$13.00	\$15.70	\$0.00	\$77.51
	12/01/2020	\$49.95	\$13.00	\$15.70	\$0.00	\$78.65
	06/01/2021	\$51.04	\$13.00	\$15.70	\$0.00	\$79.74
	12/01/2021	\$52.18	\$13.00	\$15.70	\$0.00	\$80.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$48.81	\$13.00	\$15.70	\$0.00	\$77.51
	12/01/2020	\$49.95	\$13.00	\$15.70	\$0.00	\$78.65
	06/01/2021	\$51.04	\$13.00	\$15.70	\$0.00	\$79.74
	12/01/2021	\$52.18	\$13.00	\$15.70	\$0.00	\$80.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2020	\$54.69	\$10.75	\$22.09	\$0.00	\$87.53
	02/01/2021	\$55.33	\$10.75	\$22.09	\$0.00	\$88.17
	08/01/2021	\$56.73	\$10.75	\$22.25	\$0.00	\$89.73
	02/01/2022	\$57.32	\$10.75	\$22.25	\$0.00	\$90.32

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile

Effective Date - 08/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.35	\$10.75	\$22.09	\$0.00	\$60.19
2	60	\$32.81	\$10.75	\$22.09	\$0.00	\$65.65
3	70	\$38.28	\$10.75	\$22.09	\$0.00	\$71.12
4	80	\$43.75	\$10.75	\$22.09	\$0.00	\$76.59
5	90	\$49.22	\$10.75	\$22.09	\$0.00	\$82.06

Effective Date - 02/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.67	\$10.75	\$22.09	\$0.00	\$60.51
2	60	\$33.20	\$10.75	\$22.09	\$0.00	\$66.04
3	70	\$38.73	\$10.75	\$22.09	\$0.00	\$71.57
4	80	\$44.26	\$10.75	\$22.09	\$0.00	\$77.10
5	90	\$49.80	\$10.75	\$22.09	\$0.00	\$82.64

Notes:

Apprentice to Journeyworker Ratio:1:3

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2020	\$40.55	\$8.60	\$17.24	\$0.00	\$66.39
	12/01/2020	\$41.53	\$8.60	\$17.24	\$0.00	\$67.37
	06/01/2021	\$42.55	\$8.60	\$17.24	\$0.00	\$68.39
	12/01/2021	\$43.56	\$8.60	\$17.24	\$0.00	\$69.40

For apprentice rates see "Apprentice- LABORER"

TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2020	\$39.27	\$8.60	\$17.24	\$0.00	\$65.11
	12/01/2020	\$40.25	\$8.60	\$17.24	\$0.00	\$66.09
	06/01/2021	\$41.27	\$8.60	\$17.24	\$0.00	\$67.11
	12/01/2021	\$42.28	\$8.60	\$17.24	\$0.00	\$68.12

For apprentice rates see "Apprentice- LABORER"

TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2020	\$39.15	\$8.60	\$17.24	\$0.00	\$64.99
	12/01/2020	\$40.13	\$8.60	\$17.24	\$0.00	\$65.97
	06/01/2021	\$41.15	\$8.60	\$17.24	\$0.00	\$66.99
	12/01/2021	\$42.16	\$8.60	\$17.24	\$0.00	\$68.00

For apprentice rates see "Apprentice- LABORER"

TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$48.81	\$13.00	\$15.70	\$0.00	\$77.51
	12/01/2020	\$49.95	\$13.00	\$15.70	\$0.00	\$78.65
	06/01/2021	\$51.04	\$13.00	\$15.70	\$0.00	\$79.74
	12/01/2021	\$52.18	\$13.00	\$15.70	\$0.00	\$80.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2020	\$36.02	\$12.91	\$13.72	\$0.00	\$62.65
	12/01/2020	\$36.02	\$12.91	\$14.82	\$0.00	\$63.75
	06/01/2021	\$36.82	\$12.91	\$14.82	\$0.00	\$64.55
	08/01/2021	\$36.82	\$13.41	\$14.82	\$0.00	\$65.05
	12/01/2021	\$36.82	\$13.41	\$16.01	\$0.00	\$66.24
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	06/01/2020	\$51.38	\$8.60	\$17.69	\$0.00	\$77.67
	12/01/2020	\$52.36	\$8.60	\$17.69	\$0.00	\$78.65
	06/01/2021	\$53.38	\$8.60	\$17.69	\$0.00	\$79.67
	12/01/2021	\$54.39	\$8.60	\$17.69	\$0.00	\$80.68
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	06/01/2020	\$53.38	\$8.60	\$17.69	\$0.00	\$79.67
	12/01/2020	\$54.36	\$8.60	\$17.69	\$0.00	\$80.65
	06/01/2021	\$55.38	\$8.60	\$17.69	\$0.00	\$81.67
	12/01/2021	\$56.39	\$8.60	\$17.69	\$0.00	\$82.68
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2020	\$43.45	\$8.60	\$17.69	\$0.00	\$69.74
	12/01/2020	\$44.43	\$8.60	\$17.69	\$0.00	\$70.72
	06/01/2021	\$45.45	\$8.60	\$17.69	\$0.00	\$71.74
	12/01/2021	\$46.46	\$8.60	\$17.69	\$0.00	\$72.75
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2020	\$45.45	\$8.60	\$17.69	\$0.00	\$71.74
	12/01/2020	\$46.43	\$8.60	\$17.69	\$0.00	\$72.72
	06/01/2021	\$47.45	\$8.60	\$17.69	\$0.00	\$73.74
	12/01/2021	\$48.46	\$8.60	\$17.69	\$0.00	\$74.75
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2020	\$35.44	\$12.91	\$13.72	\$0.00	\$62.07
	12/01/2020	\$35.44	\$12.91	\$14.82	\$0.00	\$63.17
	06/01/2021	\$36.24	\$12.91	\$14.82	\$0.00	\$63.97
	08/01/2021	\$36.24	\$13.41	\$14.82	\$0.00	\$64.47
	12/01/2021	\$36.24	\$13.41	\$16.01	\$0.00	\$65.66
VOICE-DATA-VIDEO TECHNICIAN <i>ELECTRICIANS LOCAL 96</i>	09/06/2020	\$31.54	\$11.13	\$15.54	\$0.00	\$58.21
	09/05/2021	\$32.86	\$11.57	\$15.72	\$0.00	\$60.15
	09/04/2022	\$34.19	\$12.20	\$15.91	\$0.00	\$62.30

Apprentice - VOICE-DATA-VIDEO TECHNICIAN - Local 96

Effective Date - 09/06/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$15.77	\$11.13	\$3.94	\$0.00	\$30.84
2	55	\$17.35	\$11.13	\$3.99	\$0.00	\$32.47
3	60	\$18.92	\$11.13	\$15.16	\$0.00	\$45.21
4	65	\$20.50	\$11.13	\$15.21	\$0.00	\$46.84
5	70	\$22.08	\$11.13	\$15.25	\$0.00	\$48.46
6	75	\$23.66	\$11.13	\$15.30	\$0.00	\$50.09
7	80	\$25.23	\$11.13	\$15.35	\$0.00	\$51.71
8	85	\$26.81	\$11.13	\$15.39	\$0.00	\$53.33

Notes:

Apprentice to Journeyworker Ratio:1:1

WAGON DRILL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2020	\$34.31	\$8.60	\$15.77	\$0.00	\$58.68
	12/01/2020	\$35.20	\$8.60	\$15.77	\$0.00	\$59.57
	06/01/2021	\$36.12	\$8.60	\$15.77	\$0.00	\$60.49
	12/01/2021	\$37.03	\$8.60	\$15.77	\$0.00	\$61.40

For apprentice rates see "Apprentice- LABORER"

WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2020	\$49.33	\$13.00	\$15.70	\$0.00	\$78.03
	12/01/2020	\$50.48	\$13.00	\$15.70	\$0.00	\$79.18
	06/01/2021	\$51.58	\$13.00	\$15.70	\$0.00	\$80.28
	12/01/2021	\$52.73	\$13.00	\$15.70	\$0.00	\$81.43

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

WATER METER INSTALLER <i>PLUMBERS LOCAL 4</i>	09/01/2020	\$46.91	\$9.80	\$15.71	\$0.00	\$72.42
	03/01/2021	\$47.91	\$9.80	\$15.71	\$0.00	\$73.42
	09/01/2021	\$48.91	\$9.80	\$15.71	\$0.00	\$74.42
	03/01/2022	\$49.91	\$9.80	\$15.71	\$0.00	\$75.42

For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"

Outside Electrical - East

CABLE TECHNICIAN (Power Zone) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$29.67	\$9.25	\$1.89	\$0.00	\$40.81
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For apprentice rates see "Apprentice- LINEMAN"

CABLEMAN (Underground Ducts & Cables) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$42.03	\$9.25	\$10.27	\$0.00	\$61.55
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For apprentice rates see "Apprentice- LINEMAN"

DRIVER / GROUNDMAN CDL <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$34.62	\$9.25	\$10.07	\$0.00	\$53.94
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For apprentice rates see "Apprentice- LINEMAN"

DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$27.20	\$9.25	\$1.82	\$0.00	\$38.27
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For apprentice rates see "Apprentice- LINEMAN"

EQUIPMENT OPERATOR (Class A CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$42.03	\$9.25	\$14.35	\$0.00	\$65.63
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For apprentice rates see "Apprentice- LINEMAN"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
EQUIPMENT OPERATOR (Class B CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$37.09	\$9.25	\$10.87	\$0.00	\$57.21
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$22.25	\$9.25	\$1.67	\$0.00	\$33.17
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN -Inexperienced (<2000 Hrs.) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$27.20	\$9.25	\$1.82	\$0.00	\$38.27
For apprentice rates see "Apprentice- LINEMAN"						
JOURNEYMAN LINEMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$49.45	\$9.25	\$17.48	\$0.00	\$76.18

Apprentice - LINEMAN (Outside Electrical) - East Local 104

Effective Date - 08/30/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$29.67	\$9.25	\$3.39	\$0.00	\$42.31
2	65	\$32.14	\$9.25	\$3.46	\$0.00	\$44.85
3	70	\$34.62	\$9.25	\$3.54	\$0.00	\$47.41
4	75	\$37.09	\$9.25	\$5.11	\$0.00	\$51.45
5	80	\$39.56	\$9.25	\$5.19	\$0.00	\$54.00
6	85	\$42.03	\$9.25	\$5.26	\$0.00	\$56.54
7	90	\$44.51	\$9.25	\$7.34	\$0.00	\$61.10

Notes:

Apprentice to Journeyworker Ratio:1:2

TELEDATA CABLE SPLICER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	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>	02/04/2019	\$28.93	\$4.70	\$3.14	\$0.00	\$36.77
TELEDATA WIREMAN/INSTALLER/TECHNICIAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/04/2019	\$28.93	\$4.70	\$3.14	\$0.00	\$36.77

Additional Apprentice 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. Apprentice 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.

Section 01.11.00
SUMMARY OF WORK
11/07/2016

1.1 GENERAL PROVISIONS

- A. The Work under the Contract consists of:
1. The Project consists of: Replacement of the existing combination boiler/water heater units with new gas fired furnace with electric water heater in 8 units. Add Alternate to install New pilot heat pump replacement with gas fired water heater in 2 units.
 2. All Work either shown on the Drawings or included in the Specifications unless specifically indicated as not to be done.
- B. In addition, the Work under the Contract includes:
1. Work outside the Project Site as called for in the Contract Documents and as required for the performance of the Work.
 2. The restoration of any items damaged or destroyed by encroaching upon areas outside the Project Site.
 3. Providing and restoring, where appropriate, all temporary facilities.
- C. Additional selection criteria:
1. General Bidders must meet the additional selection criteria stated in Article 8.8 of the Instructions to Bidders. *Note: This paragraph is not applicable for projects under \$100K.*
 2. If the Awarding Authority (Owner) cannot verify compliance with the additional selection criteria from the apparent low bidder's Update Statement, the Awarding Authority (Owner) or its Prime Designer may request the bidder provide additional documentation demonstrating compliance with the Contract requirement. This may occur after the general bid opening, but prior to Contract Award.

1.2 TIME OF COMPLETION

- A. In accordance with Article 9 of the General Conditions, the Work shall start as stated in the Notice to Proceed and shall be completed within **90** consecutive calendar days.

1.3 NOTICE TO PROCEED

- A. Upon the Department's Validation of the Owner Contractor Agreement the Owner shall Issue the Notice to Proceed for Construction. The Notice to Proceed shall include:
1. The starting date and Construction Completion date for construction.
 2. The names of the Owner's contract Officer and Alternate Contract Officer.

- B. The Owner shall send three copies of the Notice to Proceed to the Contractor.
- C. The Contractor shall sign two originals and then;
 - 1. return one to the Owner, and
 - 2. keep one copy for its own records.

1.4 WORK UNDER SEPARATE CONTRACT

A. - NOT USED

B. - NOT USED

1.5 ITEMS FURNISHED BY OWNER

A. - NOT USED

B. - NOT USED

- C. The Contractor shall include in the Contract Sum the cost of unloading, uncrating, and permanently installing the above listed items; also removal and proper disposal off the Project Site of all crating and packing materials.

1.6 SAMPLE WORK - NOT USED

1.7 COORDINATION WITH PROJECT OCCUPANTS

- A. All dwelling units will be occupied during construction. The Contractor shall take all necessary precautions to ensure the public safety and convenience of the occupants during construction.
- B. The Owner shall assist the Contractor to perform the Work in accordance with the approved operational plan by removing obstructions that may be in the Contractor's way, upon proper notice from the Contractor.
- C. The Owner may provide a Resident Coordinator to act as a liaison with residents and to assist the Contractor in fulfilling the following.
 - 1. Notifying all residents two (2) weeks before any work is scheduled in their apartments.
 - 2. Notifying each resident in writing forty-eight (48) hours before work is scheduled in his or her particular apartment.
 - 3. Obtaining signed permission to enter the apartment, if the resident will not be at home.

4. Obtain from the Owner the keys for any vacant apartment(s) or any apartment(s) where the resident is not at home. The Resident Coordinator will be responsible for the safekeeping of such keys and shall return them at the end of the workday to the Owner.
5. Notify the Owner of any resident who refuses to cooperate with the proposed operational plan.

1.8 RETAINED ITEMS

The following items, which are to be removed and are in good condition, shall be retained by the Owner (at the discretion of the Owner) and shall be stored at a location directed by the Owner. - NOT USED

1.9 PHASING

A. The specific phasing for the construction shall be as follows.

NONE

B. At the pre-construction meeting, the Contractor shall submit a construction schedule showing the proposed schedule for the Work as noted on the phasing plan drawings. The Owner and Prime Designer will work with the Contractor to ensure proper coordination.

C. The building/site will be occupied during the construction until final acceptance of the Work. Safety is of paramount importance on this Project. The Contractor must take measures to maintain a clean work site and to secure the site in a safe manner for the public, tenants and property at all times.

END OF SECTION

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Section 01.23.00

ALTERNATES

09/09/2009

1.1 SCOPE

- A. This Section lists the Alternates which appear in the Contract Documents. Consult the individual sections of the detailed requirements of each Alternate.
- B. Bid prices for each Alternate shall include overhead, profit, and all other expenses incidental to the Work under each Alternate.
- C. The Contractor and Subcontractors shall be responsible for examining the scope of each Alternate generally defined herein and for recognizing modifications to the Work caused by the Alternates and including the cost thereof in the bid price.
- D. The Contractor's alternate amount shall include the net change in cost to perform all of the work described in the Alternate.

1.2 LIST OF ALTERNATES

ALTERNATE NO 1

Install New pilot heat pump replacement with gas fired water heater in 2 units.

Performance Period: Add 20 calendar days

END OF SECTION

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SECTION 01.25.00
OR EQUALS - PRODUCT SUBSTITUTION PROCEDURES
09/09/2009

1.1 SCOPE/GENERAL REQUIREMENTS

- A. This section Supplements the General Conditions and other sections of Division 1 and supersedes any provisions regarding material substitutions/Or equals found in any of the technical sections of the specifications.
- B. The requirements of this section are in addition to any provisions of all other sections of these specifications.
- C. Definition-Whenever a specification section names one or more brands for a given item, and the Contractor wishes to submit, for consideration, another brand, the submission shall be considered an "or-equal" or a "material substitution". For the purposes of this Contract, the terms "or-equal" and "material substitution" shall be considered synonymous
- D. In no case may an item be furnished on the Work other than the item named or described, unless the Architect, with the Administrator's written concurrence, shall consider the item equal to the Item so named or described, as provided by M.G.L. c.30 § 39M.
- E. The equality of items offered as "equal" to items named or described shall be proved to the satisfaction of the Architect at the expense of the Contractor submitting the substitution.
- F. The Architect and/or the Department may require that full size samples of both the specified and proposed products be submitted for review and evaluation. The Contractor shall bear full cost for providing, delivering, and disposal of all such samples.
- G. The Contractor shall assume full responsibility for the performance of any item submitted as an "Or- Equal" and assume the costs of any changes in any Work that may be caused by such substitution.

1.2 RELATED SECTIONS

- A. 01.33.00 SUBMITTALS, SHOP DRAWINGS AND SAMPLES

1.3 OR EQUAL APPROVAL PROCESS

- A. On the transmittal, or on a separate sheet attached to the submission, the Contractor shall direct attention to any deviations, including minor limitations and variations, from the Contract Documents.
1. The Contractor shall submit to the Architect for consideration of any or-equal substitution a written point-by-point comparison containing the name and full particulars of the proposed product and the product named or described in the Contract Documents.
 2. Such submittal shall in no event be made later than 90 calendar days after the Award of the Contract or 120 calendar days prior to the incorporation of the item into the Work. In any case in which the time period specified in the Contract Documents from the Notice to Proceed to Substantial Completion is less than 120 days, this requirement can be modified by the Architect.
 3. The Contractor shall be completely responsible for the timely submission of supporting documentation.
 4. Upon receipt of a written request for approval of an or-equal substitution, the Architect shall investigate whether the proposed item shall be considered equal to the item named or described in the Contract Documents and in accordance with the provisions of MGL c.30§39M.
 5. Upon conclusion of the investigation, the Architect shall promptly advise the Construction Advisor with written notice that the item is, or is not, considered acceptable as on Or-Equal substitution with documentation to support the determination.
 6. The Construction Advisor will then solicit the concurrence of the Administrator as to the equality of the submitted item.
 7. Should the Architect determine that the submitted product substitution is not equal to the specified standard the Architect shall send written notice of this to the Contractor.
 8. Proceeding with work using the submitted item without the concurrence of the Administrator may result in rejection of the work and removal and replacement at the expense of the Contractor.

END OF SECTION

Section 01.26.00
CONTRACT MODIFICATION PROCEDURES

09/09/2009

1.1 GENERAL

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

B. Related Sections include the following:

1. Section 01.22.00 Unit Prices for administrative requirements for using unit prices.
2. Section 01.29.00 Payment Procedures for administrative requirements for Applications for Payments and payment for Work perform relative to this section.
3. Section 01.74.19 Construction and Demolition Waste Management.

1.3 MINOR CHANGES IN THE WORK

A. The Prime Designer will issue in consultation with the Construction Advisor supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time and in accordance with the requirements of Article 8 of the General Conditions.

1.4 CHANGE REQUESTS

A. Owner-Initiated Proposals (Change Requests): The Prime Designer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Change Requests issued by Prime Designer are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
2. Within time specified in the Change Request, but in no event more than 20 days after receipt of Change Request, submit a written quotation (Change Estimate) estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change. Change Estimates shall include:

- a. A list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made.
 - b. The amount of workforce labor required or eliminated based on the hourly wage rates found elsewhere in these documents.
 - c. Applicable, delivery charges, equipment rental, and amounts of trade discounts.
 - d. A written statement as to the impact on the construction schedule.
- B. Contractor-Initiated Proposals (Change Requests): If latent or unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a change request to the Prime Designer which:
1. Includes a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 2. Includes a Change Estimate that itemizes the quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 3. Indicates the amount of workforce labor required or eliminated based on the hourly wage rates found elsewhere in these documents.
 4. Indicates applicable, delivery charges, equipment rental, and amounts of trade discounts.
 5. Complies with requirements in Division 1 Section 01.25.13 OR Equals Product Substitutions if the proposed change requires substitution of one product or system for a product or system specified.
- 1.5 The Contractor shall submit claims for increased costs because of a change in scope in the Contract Documents before starting work on any unforeseen or unknown condition. The Owner will reject claims submitted prior to such authorization unless a method of monitoring the impact on Contract Sum and Contract Time has been authorized

1.6 CHANGE ORDER PROCEDURES

- A. Upon the Prime Designer's agreement with a Contractor's Change Estimate, the Prime Designer will prepare a Change Order for signatures of the Owner, Contractor, and Department subject to the policies described in the DHCD Construction Handbook.
- B. The Change Order form (01.26.00.01) can be found in DHCD Construction Handbook or on the DHCD Website and a sample can be seen at the end of this section.

- C. The Contractor shall provide necessary supporting documentation for the prompt approval of Change Orders by the Owner and Department. The Contractor shall be fully responsible for any delays caused by a lack of adequate supporting documentation.
- D. All change Orders require a voted approval of the Housing Authority Board.
- E. Change Orders over \$5,000 or those that will result in a cumulative added total of 5% or more of the Original Contract Sum must also be approved by the Administrator.
- F. Payment for Change Order Work shall be by the regular payment procedure described in Section 00.29.00 and the Construction Handbook.
- G. The Owner will be responsible for disseminating copies of all approved Change Orders.

1.7 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: A Construction Change Directive instructs the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order as required by Article 8 of the general Conditions.
 - 1. A Construction Change Directive contains a complete description of a change in the Work. It also designates the method to be followed to determine any change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 - 1. After completion of a change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.
 - 2. These costs must be incorporated into a Change Order which must be approved following the process described in Paragraph 6 Above.
- C. The process for when and how to utilize a Construction Change Directive and the necessary methods for monitoring said Work are described in the Construction Handbook.
- D. The Construction Change Directive form (01.26.00.02) can be found in the DHCD Construction Handbook or on the DHCD website, and a sample can be seen at the end of this section.
- E. Payment for work completed under the auspices of a Construction Change Directive must be included in an approved Change Order before any payment for extra work can be made per the process described in Section 01.29.00.

END OF SECTION

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CHANGE ORDER

Owner: _____ Housing Authority Date: _____ Number _____
Development Number(s): _____ FISH No: _____
Contractor: _____ Architect: _____
Telephone No: _____ Telephone No: _____
Fax: _____ Fax: _____
Email: _____ Email: _____

The following change is ordered in accordance with Article 8 of the General Conditions of the Contract:

The Work described above shall (increase) (decrease) (not affect) the Contract Sum by: \$ _____
The Work described above represents an increase in the Original Contract Sum of _____ %
The effect of all Change Orders (including this one) is to increase in the Original Contract Sum by: _____ %
The Work described above shall (increase) (not affect) the Contract Time by _____ calendar days

The conditions hereinbefore referred to are as follows:

- A. The aforementioned change and work affected thereby is subject to all contract stipulations and covenants.
- B. The rights of the Owner are not prejudiced.
- C. All claims against the Owner which are incidental to or a consequence of the aforementioned change are satisfied.
- D. This change order is not valid until approved by the Owner, Architect, and DHCD.
- E. Signature of the Contractor indicates agreement herewith, including adjustment to contract sum and/or contract time.

The above named Housing Authority met on _____ and voted to approve this Change Order:

Certified: _____
Contract Officer

Approved: Architect _____
Firm: _____
By: _____
Date: _____

Reviewed: Construction Advisor
Dept of Housing & Community Development
By: _____
Date: _____

Approved: Contractor _____
Firm: _____
By: _____
Date: _____

Approved: Director of Construction Management
Dept of Housing & Community Development
By: _____
Date: _____

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CONSTRUCTION CHANGE DIRECTIVE

Commonwealth of Massachusetts
Department of Housing & Community Development

CHANGE DIRECTIVE NO: _____

Owner: _____ **Housing Authority**

Date: _____

Development Number: _____

DHCD FISH Number _____

Contractor _____

Architect _____

Telephone No: _____

Telephone No: _____

Fax: _____

Fax: _____

Pursuant to Article 8 of the General Conditions you are hereby directed to make the following change(s) in this Contract

DO NOT USE THIS FORM FOR LUMP SUM CHANGES OR TIME EXTENSIONS .

The Contract Sum shall be adjusted by the following method (please check one)

- A. Unit Price of \$ _____ per _____
- B. Unit Prices found in Section 01.20.00 of the specifications.
- C. Unit Prices found on the Attached list.
- D. Time and materials basis per Article 8.3.1.3 of the General Conditions
- E. Subject to the Conditions of Article 8.5 and 8.7 of the General Conditions **"Work Done Under Protest"**. The Contractor is not relieved of the obligation to notify the Owner's Representative when protested work is being performed, to allow for accurate monitoring. Failure to provide such notice may jeopardize the Contractor's right to compensation.
- F. As follows: _____

THE NOT TO EXCEED LIMIT FOR THIS CHANGE DIRECTIVE IS \$ _____ .

- The Contract time shall be properly adjusted upon completion of any compensable work.
- Payment for the aforementioned work cannot be processed until executing an appropriate change order(s) to adjust the contract sum.
- When signed by the Owner and DHCD and received by the Contractor, this Construction Change Directive becomes effective IMMEDIATELY, and the Contractor shall proceed with the change(s) described above.
- This change directive is not valid until approved by the Owner and DHCD

Approved: Architect

Approved: Owner

Firm: _____

_____ **Housing Authority**

By: _____

By: _____

Date: _____

Date: _____

**Reviewed Construction Advisor
Department of Housing & Community Development**

**Approved: Director of Construction Management
Department of Housing & Community Development**

By: _____

By: _____

Date: _____

Date: _____

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Section 01.29.00
PAYMENT PROCEDURES
1/21/2010

1.1 GENERAL

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Related Specification Sections include the following:
1. Section 01.26.00 - Contract Modification Procedures for administrative procedures for handling changes to the Contract.
 2. Section 01.22.00 - Unit Prices for administrative requirements governing use of unit prices.
 3. Section 01.74.19 - Construction Waste and Demolition Management
 4. Section 01.77.00 - Completion Project Completion Procedures
 5. Section 01.78.39 - Project Record Drawings

1.3 SCHEDULE OF VALUES

- A. Definition - Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.
- B. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, some which can be found in the DHCD Construction Handbook or at the end of this section:
 - a. Application for Payment forms with Continuation Sheets.
 - b. Submittals Schedule.
 - c. Contractor's Construction Schedule.
 2. Submit the Schedule of Values to Prime Designer at earliest possible date but no later than seven days before the date scheduled for submittal of the initial Application for Payment.
 3. Sub-schedules: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values correlated with each phase of payment.

- C. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Summary Schedule of Values. Provide a minimum of at least one line item for each Specification Section. Provide additional breakdown of larger sections when requested by the Prime Designer
1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of Prime Designer.
 - c. Department's FISH number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 2. Submit draft Schedule of Values using the Application for Payment Continuation Sheets (01.29.00.02). Copies can be found in the Construction Handbook. A sample can be seen at the end of this section
 3. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Change Orders Approved by the LHA and Department.
 - e. Dollar value.
 4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts in accordance with the examples shown in the Construction Handbook.
 5. Subdivide filed subcontract amounts into major tasks.
 6. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
 7. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. Include evidence of Transfer of Title of material and proof of ownership by the contractor, insurance or bonded warehousing.
 8. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
 9. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work in place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at DHCD Construction Advisor's option.

1.4 APPLICATIONS FOR PAYMENT

- A. Payment Application Content: Each Application for Payment shall be consistent with previous applications and payments as certified by the Prime Designer and paid for by the Owner.
- B. The Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involves additional requirements
- C. Payment Application Times: Progress payments shall be submitted to the Prime Designer on a day agreed to at the beginning of the work by the Prime Designer, Owner, and DHCD Construction Advisor. The period covered by each Application for Payment is one month, ending on the last day of the month.
- D. Payment Applications Forms: Use the Application for Payment and Continuation forms found in the Construction Handbook. These forms are also available on the DHCD Web site www.Mass.gov/dhcd and a sample can be seen at the end of this section.
- E. Application Preparation: Complete every entry on the form. The form shall be executed and notarized by a person authorized to sign legal documents on behalf of Contractor. The Prime Designer will return incomplete applications without action for not being in proper form.
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 approved by the Owner and Department before the last day of the construction period covered by application.
- F. Transmittal: Submit 1 signed and notarized original copy of each Application for Payment to the Prime Designer by a method ensuring receipt within 24 hours.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with the submittal of first Application for Payment include the following:
1. Project Directory.
 2. Schedule of Values.
 3. Contractor's Construction Schedule.
 4. Products list.
 5. Any proposed product substitutions/or equals.
 6. Submittals Schedule.
 7. List of Contractor's staff assignments (Project Directory).
 8. List of Contractor's principal consultants.

9. Copies of building permits.
 10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
- H. Payroll Certifications – In addition to the requirement to provide weekly payroll certifications as required by MGL c.149 §§26 - 27H, the Contractor shall provide evidence that required each Application for Payment that such submissions are current. Applications received without such certified payroll documentation shall be considered not in proper form and returned to the Contractor for re-submittal with required documentation.
- I. 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.
- J. Final Payment Application: Submit the final Application for Payment with supporting documentation required by Section 01.77.00 Close out Procedures and 01.78.39 Project Record Drawings.

END OF SECTION

Contractor: _____ To: _____ Housing Authority

 Telephone: _____ Telephone: _____
 Fax: _____ Fax: _____
 Email: _____ Email: _____
 Development No. _____ Period Ending: _____
 Contract for: _____ FISH No: _____

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below in connection with the Continuation Sheet Attached.

	Number
1. ORIGINAL CONTRACT SUM	\$ _____ .00
2. Net change by Approved Change Orders	\$ _____ .00
<i>List On Attached Continuation Sheet</i>	
3. CONTRACT SUM TO DATE (Line 1 + Line 2)	\$ _____ .00
4. TOTAL COMPLETED & STORED TO DATE	\$ _____ .00
5. RETAINAGE - 5% of Total Completed and Stored to Date	\$ _____ .00
6. TOTAL COMPLETED LESS RETAINAGE (Line 4 - Line 5)	\$ _____ .00
7. LESS PREVIOUS APPROVED CERTIFICATES FOR PAYMENT	\$ _____ .00
8. CURRENT PAYMENT DUE (Line 6 - Line 7)	\$ _____ .00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, that all workers used on this project have been paid in accordance with M.G.L. c. 149 §§26-27H, that all subcontractors have been paid in accordance with M.G.L. c.30 §39F, that the Contractor has complied with all applicable tax laws pursuant to M.G.L. c.62(c) §49(a), and that the current payment shown herein is now due. Acceptance of the final payment due under this contract shall operate as a release to the Owner, Department and Architect from all claims and liability.

CONTRACTOR: _____ State of _____ County of: _____
 On this _____ day of _____ 20____ before me, the undersigned notary public, _____ personally appeared, proved to me through satisfactory evidence which was _____ to be the person whose name is signed on the preceding document in my presence
 By: _____ Date _____
 NOTARY SEAL
 Notary Public: _____
 My Commission expires: _____

ARCHITECT/ENGINEER'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on site observations and the data comprising the application, the Architect/Engineer certifies to the Owner that to the best of the Architect/Engineer's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

ARCHITECT/ENGINEER AMOUNT CERTIFIED\$ _____

By: _____ Date _____ Attach an explanation if the amount certified differs from the amount claimed due by the Contractor on line 8 above. Initial all figures on the application and any continuation sheet that changed in accordance with M.G.L. c.30 §39K.
 Title _____

_____ Housing Authority DHCD Construction Advisor: DHCD - Director Construction Management
 By: _____ By: _____ By: _____
 Date: _____ Date: _____ Date: _____

For Greater than 95%

DHCD AMOUNT APPROVED \$ _____

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Project:
Continuation Sheet

Page of

Payment Application Number:
Period to:

A	B	C	D	E	F	G	H	I
Spec. Section	Description of Work	Scheduled Value	Previously Approved	Completed this Period	Materials Stored Not in D or E	Total Completed and Stored to Date D+E+F	%	Balance to Finish
SAMPLE								

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Section 01.31.00
PROJECT MANAGEMENT AND COORDINATION
09/09/2009

1.1 GENERAL PROVISIONS

- A. The Conditions of the Contract and other Sections of Division I, General Requirements apply to this section.

1.2 RELATED SECTIONS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Related Specification Sections include the following:
1. Section 01.45.00 - Quality Control
 2. Section 01.50.00 - Temporary Facilities and Controls
 3. Section 01.74.19 - Construction Waste and Demolition Management

1.3 PROJECT MANAGEMENT

- A. The Contractor's attention is directed to Article 4 of the General Conditions.
- B. Project Superintendent.
1. The Contractor shall employ a Superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The Superintendent shall represent the Contractor, and communications given to the Superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.
 2. The Superintendent shall be a competent and responsible employee, satisfactory to the Owner, who is regularly employed by the Contractor and is designated by the Contractor as its representative to be in full time attendance at the Project site throughout the construction of the Work.
 3. The Superintendent shall be responsible for coordinating all the Work of the Contractor and the Subcontractors. The Superintendent shall be licensed consistent with the Massachusetts Building Code.
 4. The Superintendent's resume shall be submitted to the Owner prior to commencement of construction and must demonstrate to the Owner's reasonable satisfaction that the Superintendent has performed the same duties on previous construction projects similar to the Project
 5. The Superintendent shall attend each job meeting.

- C. The Contractor must supply to the Owner the home telephone number of a responsible person who may be contacted during non-work-hours for emergencies on the Project.
- D. Project Meetings
1. Prior to commencement of the Work, the Contractor shall meet in conference with representatives of the Owner, Department, and Prime Designer to discuss and develop mutual understandings relative to administration of the quality assurance program, safety program, labor provisions, the schedule of work, and other Contract procedures.
 2. The Prime Designer will regularly conduct job meetings, and keep the Owner informed of the progress and quality of the Work, and will endeavor to guard the Owner against defects and deficiencies in the Work. The Prime Designer's minutes of meetings shall be the official minutes kept on the Project. The Prime Designer shall provide copies of the meeting minutes to the Contractor, Owner, Construction Advisor, and under separate cover forward a copy (for informational purposes only) to the Department's Architectural and Engineering Services Unit.
- E. The Department's procedures, forms, and practices which must be employed on the Project are described in the Construction Handbook, and will be explained at the pre-construction conference.

1.4 COORDINATION

- A. The Contractor shall take all necessary precautions to ensure the public safety and convenience during construction.
- B. The Contractor is responsible for the security of partially completed work until the project is accepted by the Owner.

1.5 LABOR

- A. The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them, and whenever the Owner shall notify the Contractor, in writing, that any worker is, in its opinion, incompetent, unfaithful, disorderly, or otherwise unsatisfactory, such employee shall be discharged from the Work and shall not again be employed on the Project except with the consent of the Owner.

- B. Workers shall refrain from smoking while performing work inside dwelling units, including basement areas. The Contractor shall remove from the project workers who consistently violate this provision.

1.6 SHUTDOWN OF SERVICES

- A. The Contractor's attention is especially called to the fact that the continuous operation of services for this housing development is mandatory. If the development is to be left without heat, hot water, domestic water, electricity, gas, sanitary facilities, or any other services for more than an eight hour period, the Contractor shall submit a letter to the Owner and obtain written approval from the Owner before proceeding.
- B. If the Owner will not allow this shutdown, but wants instead a temporary means of supplying said services, the Contractor shall supply all labor, materials or whatever may be required to supply said temporary services at no extra cost to the Owner and in accordance with the state and local regulations on health and safety.

1.7 COORDINATION

- A. The Contractor shall submit for approval to the Owner a detailed operational plan showing the sequence of operations prior to commencement of any work at the site. The Owner must approve any changes to this operational plan.
- B. The work must be completed in a continuous uninterrupted operation. The Contractor must use sufficient personnel and adequate equipment to complete all the necessary work requirements within a minimum period of time.
- C. Unless specifically authorized by the Owner, in writing, the work must be conducted between the hours of 8:00 a.m. and 4:30 p.m. on Monday through Friday. No work is to be done on holidays, Saturdays, or Sundays other than for emergencies.
- D. There shall be no storage of materials, tools, and/or equipment within any of the occupied dwelling units. Any storage within unoccupied dwelling units or other space controlled by the Owner must be authorized by the Owner, in writing.
- E. Only materials and/or equipment intended and necessary for immediate use shall be brought into the dwelling units. At the end of each work day and at the completion of each phase of work, equipment and leftover or unused materials shall be removed from each dwelling unit.

- F. Whenever work is to be done inside occupied units the Contractor's superintendent and an Owner's representative shall conduct a pre-work inspection of each unit to make note of existing conditions in the unit. Special attention should be paid to areas where new work will meet existing conditions.

1.8 OWNER'S COOPERATION

- A. The Owner shall assist the Contractor to perform the Work in accordance with the approved operational plan by removing obstructions that may be in the Contractor's way, upon proper notice from the Contractor.
- B. The Owner may provide a Resident Coordinator to act as liaison with residents and to assist the Contractor in fulfilling the following:
1. Notifying all residents two (2) weeks before any work is scheduled in their apartments.
 2. Notifying each resident in writing forty-eight (48) hours before work is scheduled in his or her particular apartment.
 3. Obtaining signed permission to enter the apartment, if the resident will not be at home.
 4. Obtain from the Owner the keys for any vacant apartment(s) or any apartment(s) where the resident is not at home. The Resident Coordinator will be responsible for the safekeeping of such keys and shall return them at the end of the workday to the Owner.
 5. Notify the Owner of any resident who refuses to cooperate with the proposed operational plan.

END OF SECTION

Section 01.33.00

SUBMITTALS - SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

9/9/2009

1.1 RELATED DOCUMENTS

- A. This Section supplements Subparagraphs 4.6.3 and 5.3.5 and Paragraphs 4.7, 4.8, and 4.15 of the General Conditions.
- B. Consult the individual sections of the specifications for the specific submittals required under those sections and for further details and descriptions of the requirements.
- C. Section 01.25.00 OR Equals - Product Substitution Procedures.
- D. Section 01.74.19 Construction and Demolition Waste Management.

1.2 GENERAL PROCEDURES FOR SUBMITTALS

- A. **Timeliness** - The Contractor shall transmit each submittal to the Prime Designer sufficiently in advance of performing related Work or other applicable activities so that the installation is not delayed by processing times, including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Prime Designer in advance of the Work.
- B. **Sequence** - The Contractor shall transmit each submittal in a sequence which will not result in the Prime Designer's approval having to be later modified or rescinded by reason of subsequent submittals which should have been processed earlier or concurrently for coordination.
- C. **Contractor's Review and Approval** - Only submittals received from and bearing the stamp of approval of the Contractor will be considered for review by the Prime Designer. Submittals shall be accompanied by a transmittal notice stating name of Project, date of submittal, "To", "From" (Contractor, Subcontractor, Installer, Manufacturer, Supplier), Specification Section, or Drawing No. to which the submittal refers, purpose (first submittal, resubmittal), description, remarks, distribution record, and signature of transmitter.
- D. **Prime Designer's Action** - The Prime Designer will review the Contractor's submittals and return them with one of the following actions recorded thereon by appropriate markings:

1. Final Unrestricted Release: Where marked "Approved" the Work covered by the submittal may proceed provided it complies with the requirements of the Contract Documents.
 2. Final-But-Restricted Release: When marked "Approved as Noted" the Work may proceed provided it complies with the Prime Designer's notations or corrections on the submittal and complies with the requirements of the Contract Documents. Acceptance of the Work will depend on these compliances.
 3. Returned for Re-submittal: When marked "Revise and Resubmit" or "Disapproved" the Work covered by the submittal (such as purchasing, fabrication, delivery, or other activity) should not proceed. The submittal should be revised or a new submittal resubmitted without delay, in accordance with the Prime Designer's notations stating the reasons for returning the submittal.
 4. No Action Required: When marked "No Action Required", the Work covered by the submittal is for information only and does not require review or action by the Prime Designer.
- E. Processing - All costs for printing, preparing, packaging, submitting, resubmitting, and mailing/delivering submittals required by this Contract shall be included in the Contract Sum.
1. The Contractor shall electronically deliver (in PDF format) submittals to the Prime Designer and copy the Owner. Submittals forwarded directly from subcontractors, manufacturers or vendors or directly to the Prime Designer's consultants will be returned without action. The Prime Designer will be responsible for distribution of the submittals to the consultants for review and action.
 2. The Contractor shall be responsible for preparing a "hard copy" of the submittal (up to seven copies, four of which will be returned to the Contractor) when requested by the Prime Designer and/or Owner in writing. Each submittal shall be accompanied by a transmittal notice bearing the Contractor's approval stamp. The Contractor will be responsible for converting the hard copy submittal, with the Prime Designer's actions, into an electronic format (in PDF format) as part of the final close-out documents.
 3. Upon review by the Prime Designer, the consultants and/or the Owner, the Prime Designer will return an electronic copy of the submittal annotating the action taken.
 4. The Contractor is responsible for distribution of the reviewed submittals to the Contractor's personnel and subcontractors.
 5. The Contractor shall retain an electronic copy of each submittal and the action taken by the Prime Designer for submission as "record submittals" at the close-out of the Project in accordance with Section 01.77.00.

1.3 OR EQUALS

- A. Definition - Whenever a specification section names one or more brands for a given item, and the Contractor wishes to submit, for consideration, another brand, the submission shall be considered an "or-equal" or a "material substitution". For the purposes of this Contract, the terms "or-equal" and "material substitution" shall be considered synonymous.
- B. In no case may an item be furnished on the Work other than the item named or described, unless the Prime Designer, with the Administrator's written concurrence, shall consider the item equal to the Item so named or described, as provided by M.G.L. c.30 § 39M.
- C. The equality of items offered as "equal" to items named or described shall be proved to the satisfaction of the Prime Designer at the expense of the Contractor submitting the substitution in accordance with the process described in Section 01.25.00 of these specifications.

1.4 SUBMISSION OF PRODUCT DATA

- A. The Contractor shall submit Product Data to the Prime Designer. All such data shall be specific and identification of material or equipment submitted shall be clearly marked in ink. Data of general nature will not be accepted.
- B. Product Data shall be accompanied by a transmittal notice. The Contractor's stamp of approval shall appear on the printed information itself, in a location which will not impair legibility.
- C. Product Data returned by the Prime Designer as "Disapproved" shall be resubmitted in 7 copies until the Prime Designers approval is obtained.
- D. When the Product Data are acceptable, the Prime Designer will stamp them "Approved" or "Approved as Corrected", to the Contractor. The Contractor shall provide and distribute additional copies as may be required to complete the Work.
- E. The Contractor shall maintain one full set of approved, original, Product Data at the site.

1.5 SUBMISSION OF SHOP DRAWINGS

- A. Shop Drawings shall be complete, giving all information necessary or requested in the individual section of the specifications. They shall also show adjoining Work and details of connection thereto.

- B. Shop Drawings shall be for whole systems. Partial submissions will not be accepted.
- C. The Prime Designer reserves the right to review and approve shop drawings only after approval of related product data and samples.
- D. Shop drawings shall be properly identified and contain the name of the project, name of the firm submitting the shop drawings, shop drawing number, date of shop drawings and revisions, Contractor's stamp of approval, and sufficient spaces near the title block for the Prime Designer's stamp.
- E. The Contractor shall submit shop drawings to the Prime Designer. If hard copy is submitted, the prints (seven copies, four of which will be returned to the Contractor) shall be mailed or delivered in roll form. Each submittal shall be accompanied by a transmittal notice bearing the Contractor's approval stamp.
- F. When the Prime Designer returns a marked submittal with the stamp "Revise and Resubmit" or "Disapproved", the Contractor shall correct the original drawing or prepare a new drawing and resubmit thereof to the Prime Designer for approval. This procedure shall be repeated until the Prime Designer's approval is obtained.
- G. When the Prime Designer returns submittal with the stamp "Approved" or "Approved as Corrected", the Contractor shall provide and distribute electronic copies (PDF format) and/or prints for all Contractor and Subcontractors use.
- H. The Contractor shall maintain one full set of approved shop drawings at the site.

1.6 SUBMISSION OF SAMPLES

- A. Unless otherwise specified in the individual section, the Contractor shall submit two specimens of each sample.
- B. A transmittal notice with the Contractors stamp of approval shall be included with all sample submittals.
- C. Samples shall be of adequate size to permit proper evaluation of materials. Where variations in color or in other characteristics are to be expected, samples shall show the maximum range of variation. Materials exceeding the variation of approved samples will not be approved on the Work

- D. Samples of items of interior finishes shall be submitted all at once to permit a coordinated selection of colors and finishes.
- E. Samples that can be conveniently mailed shall be sent directly to the Prime Designer, accompanied by a transmittal notice. All transmittals shall be stamped with the Contractor's approval stamp of the material submitted.
- F. All other samples shall be delivered at the field office of the Project Representative with sample identification tag attached and properly filled in.
- G. Transmittal notice of samples so delivered with the Contractor's stamp of approval shall be mailed to the Prime Designer.
- H. If a sample is rejected by the Prime Designer, a new sample shall be resubmitted in the specified manner. This procedure shall be repeated until the Prime Designer approves the sample.
- I. Samples will not be returned unless return is requested at the time of submission. The right is reserved to require submission of samples whether or not particular mention is made in the specifications, at no additional cost to the Owner.

END OF SECTION

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Section 01.45.00
QUALITY CONTROL
9/9/2009

1.1 GENERAL SCOPE OF THE WORK

- A. General Contractor's quality control and control of installation.
- B. Tolerances.
- C. References.
- D. Mock up requirements.
- E. Testing and Inspection Services.
- F. Manufacturers' field services.
- G. Examination.

1.2 RELATED DOCUMENTS

- A. This section supplements the General Conditions, Supplementary Conditions, the Drawings, and all other parts of the Contract Documents.
- B. Consult the individual sections of the specifications for specific items required under those sections.

1.3 QUALITY CONTROL AND CONTROL OF INSTALLATION

- A. The General Contractor shall provide inspections, tests, and quality control services specified herein and in individual specification sections and required by governing authorities having jurisdiction, except where they are specifically required under a filed sub-bid section of the specification. In those cases they will be the responsibility of the filed subcontractor. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturer's instructions, including each step in sequence.
- C. When manufacturer's instructions conflict with the Contract Documents, request clarification from the Prime Designer before proceeding.

- D. Comply with specified standards as minimum quality of Work except where more stringent tolerances, codes, or specific requirements indicate higher standards or workmanship.
- E. Perform the Work using persons qualified to produce the required and specified quality.
- F. Verify field measurements are as indicated on Shop Drawings or as instructed by the manufacturer.
- G. Secure products in place with appropriate positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.4 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not allow tolerances to accumulate.
- B. Comply with manufacturer's tolerances. When manufacturers' tolerances conflict with Contract Documents, request clarification from the Prime Designer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products into place.

1.5 REFERENCES

- A. For products or workmanship specified by associations, trade or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on the date of Bid Opening. Except where specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. When specified reference standards conflict with Contract Documents, request clarification from the Prime Designer before proceeding.
- E. Neither contractual relationships, duties, nor responsibilities of parties, nor those of the Prime Designer shall be altered from the Contract Documents by mention or inference otherwise in reference documents.

1.6 MOCK UP REQUIREMENTS

- A. Tests will be performed under provisions identified in this section and identified in respective product specifications.
- B. Assemble and erection specified items with specified attachment and anchorage devices, flashings, seals and finishes.
- C. Accepted mock-ups shall be the comparison standard for remaining Work.
- D. Where mock-up has been accepted by the Prime Designer and is specified in product specification sections to be removed; remove mock-up and clear area when directed to do so by the Prime Designer.

1.7 TESTING AND INSPECTION SERVICES

- A. The Owner may employ and pay for specified services of an independent firm to perform testing and inspection.
- B. Reports will be submitted by the independent firm to the Prime Designer and Contractor indicating observations and results of tests.
- C. The Contractor and all Subcontractors shall cooperate with the independent firm, furnish sample materials, design mixes, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
 - 1. Notify the Prime Designer 24 hours prior to expected time for operations requiring services.
 - 2. The Prime Designer will make the final decision as to when services or testing will or will not be performed.
 - 3. Make arrangements with the independent firm and pay for additional samples and tests for the Contractor's use.
- D. Testing and employment of testing agency or laboratory shall not relieve the Contractor of the obligation to perform work in accordance with the requirements of the Contract Documents.
- E. Re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Prime Designer. Payment for re-testing or re-inspection will be charged to the Contractor by deducting testing charges from the Contract Sum.
- F. Testing Agency responsibilities:
 - 1. Test samples of mixes submitted by the Contractor.

2. Provide qualified personnel at the site. Cooperate with the Prime Designer and Contractor in performance of services.
 3. Perform specified sampling and testing of products in accordance with specified standards.
 4. Promptly notify the Prime Designer and Contractor of observed irregularities or non-conformance of Work or products.
 5. Perform additional tests required by the Prime Designer.
 6. Attend progress meetings if requested by the Prime Designer.
- G. Testing Agency Reports: After each test, promptly submit two copies of the report to the Prime Designer and to the Contractor. Provide interpretation of the results when requested by the Prime Designer. All test reports shall include:
1. Date issued.
 2. Project title and number.
 3. Name of inspector.
 4. Date and time of sampling or inspection.
 5. Identification of product and specification section(s).
 6. Test location.
 7. Type of inspection or test.
 8. Date of test.
 9. Results of tests or inspection.
 10. Conformance with Contract Documents.
- H. Limits of Testing Agency Authority
1. Testing Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 2. Testing Agency may not approve or accept any portion of the Work.
 3. Testing Agency may not assume duties of the Contractor.
 4. Testing Agency has no authority to stop Work.

1.8 MANUFACTURERS' FIELD SERVICES

- A. When individual specification section(s), require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces to receive work, and installation quality of workmanship, start-up of equipment , test, adjust, and balance equipment as applicable and to initiate instructions when necessary these services shall be provided at no additional cost to the Owner.
- B. Submit the qualifications of any observers to the Prime Designer and Owner prior to of required observations. Observers are subject to the approval of the Owner based on the observer's credentials. This submission shall be made allowing adequate time for the Prime Designer to review the observer's

credentials. This approval does not relieve the Contractor of any obligation to complete the Work in accordance with the Contract Documents.

- C. Report to the Prime Designer, observations and site decisions or instruction given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

1.9 EXAMINATION

- A. The Contractor shall verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. The Contractor shall verify existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. The Contractor shall examine and verify specific conditions described in individual specification sections.
- D. The Contractor shall verify utility services are available, of correct characteristics, and in correct locations.

END OF SECTION

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Section 01.50.00
TEMPORARY FACILITIES AND CONTROLS
11/07/2016

1.1 GENERAL REQUIREMENTS

- A. The Contractor shall be responsible for providing and maintaining all temporary facilities until Substantial Completion. Removal of such prior to Substantial Completion must be with the concurrence of the Prime Designer. The Contractor bears full responsibility for re-providing any facility removed prior to Substantial Completion.
- B. Removal of all temporary facilities shall be a condition precedent to Substantial Completion unless directed otherwise by the Prime Designer or specifically noted in the specifications.
- C. The Contractor must comply with all safety laws and regulations of the Commonwealth of Massachusetts, the United States Government, and local government agencies applicable to Work under this contract. The Contractor's attention is directed to the Commonwealth of Massachusetts, Department of Labor and Division of Occupational Safety Regulations.

1.2 TEMPORARY ELECTRICITY

- A. Temporary service and lighting shall be provided by a licensed electrician selected and paid for by the Contractor. This work shall be performed under the direct supervision of at least one master electrician, who will be present on the project at all times when such work is being performed. This service shall include coordination with the local utility and other authorities having jurisdiction.
- B. The Contractor may make use of the electricity available at the site, metered and paid for by the Owner.
- C. Where heavy duty electric equipment drawing current in excess of 15 amperes is involved, the trade requiring such excessive amperage shall provide temporary service to supply the power.
- D. All temporary work shall be provided in conformity with the National Electric Code, State laws, and requirements of the power company. Particular attention is called to Commonwealth of Massachusetts, Department of Labor Division of Occupational Safety Regulations.
- E. Temporary Electric Service and Lighting shall include but not be limited to:

1. All labor, materials, and equipment necessary to supply temporary power of adequate capacity for the project.
2. Transformers and meters, when required by the power company, will be furnished by the power company and paid for by the Contractor.
3. Temporary work of a special nature, not otherwise specified hereunder, shall be provided, maintained, and paid for by the trade requiring same.
4. The Contractor shall furnish, install, and maintain lamps in operating condition.
5. The Contractor, and each Subcontractor, shall furnish their own extension cords and additional lamps as may be required for their work.
6. All lamps installed in permanent lighting fixtures and used as temporary lights during the construction period shall be removed and replaced shortly before Substantial Completion by the appropriate set of lamps required to be provided under the Electrical section of the specifications.
7. The temporary electrical facilities shall be dismantled and completely remove from the project site, only when the permanent electrical system is operational and accepted by the Prime Designer. This removal shall be done by a properly licensed electrician.

1.3 TEMPORARY FIRE PROTECTION

- A. The Contractor shall take necessary precautions to insure against fire during construction. The Contractor shall be responsible to insure that the area within contract limits is kept orderly and clean and that combustible rubbish and construction debris is promptly removed from the site.
- B. Installation of equipment suitable for fire protection shall be done as soon as possible after commencement of the Work. The Contractor's attention is directed to the requirements of the Commonwealth of Massachusetts, Department of Labor and Workforce Development Regulation 454 CMR.

1.4 TEMPORARY HEAT - Interior

- A. Providing temporary heating service and equipment in interior spaces:
 1. The Contractor shall be completely responsible for providing all equipment and labor required to comply with this section.
 2. The Contractor shall utilize the services of a qualified Heating subcontractor for providing Temporary Heat. These services shall be paid for by the Contractor.
- B. The Contractor shall provide a minimum temperature of 70 degrees Fahrenheit to all occupied areas of the Project (This shall include common and public areas affected by the work).

- C. The Contractor shall provide thermometers at places designated by the Prime Designer in order to determine if specified temperatures are being maintained.
- D. Temporary heating system work shall be performed under the direct supervision of individuals properly licensed to perform the necessary work.
- E. All temporary work shall be provided in conformity with all applicable codes, State laws, and requirements of the utility company. Particular attention is called to Commonwealth of Massachusetts, Department of Labor Division of Occupational Safety Regulations.
- F. The Contractor shall pay the costs of all fuel and electricity required for temporary heating until Substantial Completion unless specified otherwise.
- G. Utilizing the Permanent Heating System for Temporary Heat:
1. The Contractor may, with the approval of the Owner, elect to utilize the permanent heating system for temporary heat. This may be allowed if the building is enclosed and after the heating system has been tested and is ready to operate and providing the Contractor complies with all provisions stated elsewhere in the Contract Documents.
 2. If the permanent heating system cannot be utilized or if work requires a shutdown of the existing system the Contractor shall make arrangements, acceptable to the Owner, to comply with this requirement at no additional cost to the Owner.
 3. The Contractor shall furnish and pay the costs of any materials and equipment which are not part of the permanent heating system and which may be required to operate the permanent heating system on a temporary basis.
 4. The Contractor shall have a qualified heating mechanic check the heating system a minimum of twice daily, when no work is being performed at the site.
 5. It shall be the Contractor's responsibility to have all portions of the permanent heating system that are used for heating during construction thoroughly cleaned and restored to first class condition, to the satisfaction of the Owner.
 6. No parts of the air handling system shall be used until temporary filters have been installed satisfactory to the Prime Designer. Such filters shall be kept clean and in efficient working condition, and at the time of Substantial Completion shall be replaced by the permanent filters at no cost to the Owner.
 7. The Owner's warranty for the permanent heating system shall begin on the date of Substantial Completion of the entire project.
- H. Installation of weather protection and heating devices shall comply with all safety regulations including provisions for adequate ventilation and fire

protection devices.

- I. Unit heaters, if used, shall be of the smokeless type and be installed and operated in such a way that finished work will not be damaged. "Salamanders" shall not be used.

1.5 TEMPORARY HEAT - Exterior - NOT USED

1.6 TEMPORARY TELECOMMUNICATIONS & FIELD OFFICE

- A. The Contractor shall be available through mobile phone service at all times and shall provide a 24 hour phone number and contact in case of emergencies.
- B. The Contractor shall provide a suitable office at the site for use by Contractor personnel.
- C. The offices shall be set in a location approved by the Prime Designer and the Awarding Authority, and shall be maintained by the Contractor in a clean and orderly condition.

1.7 TEMPORARY WATER

- A. The Contractor may make use of the available water supply at the Site for construction purposes, provided the permission of the Awarding Authority is obtained beforehand, water is verified at the source and only as long as the water is not used wastefully.
- B. The Contractor shall provide all necessary piping and hoses to utilize the available sources of water.
- C. The Contractor shall provide an adequate supply of cool drinking water with individual drinking cups for personnel on the job.

1.8 TEMPORARY STRUCTURES AND MATERIAL HANDLING

- A. The Contractor shall provide such storage sheds, temporary buildings, or trailers as required for the performance of the Contract. Subcontractors shall provide their own temporary buildings and trailers. Storage shall be located where directed by the Awarding Authority.
- B. Materials shall be handled, stored, installed, cleaned and protected in

accordance with the best practice in the industry and, except where otherwise specified in the Contract Documents, in accordance with manufacturer's specifications and directions.

- C. The Contractor must obtain the written permission of the Awarding Authority for the use of any storage facilities available on Site, but the Awarding Authority assumes no responsibility for articles stored.
- D. Lawns, paving or other surfaces within areas used by the Contractor shall be restored to original condition when temporary structures are removed.

1.9 SANITARY FACILITIES

- A. The Contractor shall provide and service an adequate number of toilet booths with chemical type toilets. The Contractor shall pay for the installation, service and removal of the chemical type toilets.
- B. The toilets shall be erected in a location approved by the Prime Designer and shall be maintained by the Contractor in a clean and orderly condition in compliance with all local and state health requirements.
- C. Under no circumstances will the Contractor's personnel be allowed to use Resident's toilets.

1.10 TEMPORARY USE OF ELEVATOR - NOT USED

1.11 HOISTING FACILITIES

- A. Except as otherwise specified, the Contractor shall provide, operate, and remove material hoists cranes, and other hoisting as required for the performance of the Work by all trades. All such hoisting service shall be without cost to the Subcontractors.
- B. Construction, maintenance and operation of material hoists shall conform to applicable requirements of the "Standard Safety Code for Building Construction", ANSI, to Association of General Contractor's "Manual" requirements and to State and local regulations.

1.12 TEMPORARY STAGING, STAIRS, CHUTES

- A. Except as otherwise specified, the Contractor shall furnish, install, maintain in safe condition, and remove all scaffolds, staging, and planking over 8 ft. in

height, as required for the use of all trades for proper execution of the Work.

- B. The Contractor shall furnish, install, maintain in safe condition and remove all temporary ramps, stairs, ladders and similar items as required for the use of all trades for the proper execution of the Work.
- C. Permanent stairs shall be erected as soon as possible, for which the Contractor shall provide temporary protective treads, risers, handrails and shaft protection.
- D. The Contractor shall furnish, install, maintain, and remove covered chutes from openings in the exterior walls of upper floors. Such chutes shall be in convenient locations and permit disposal of rubbish directly into trucks or disposal units.
- E. Debris shall not be allowed to fall freely from upper levels of the building. Materials shall not be dropped from open windows.

1.13 TEMPORARY PARKING - NOT USED

1.14 TEMPORARY TRAFFIC CONTROL - NOT USED

1.15 TEMPORARY PROTECTION

- A. The Contractor shall take all necessary precautions to ensure the public safety and convenience during construction.
- B. Any damage to buildings, roads, (public and private), bituminous concrete areas, fences, lawn areas, trees, shrubbery, poles, underground utilities, etc. shall be made good by and at the Contractor's own expense, all to the satisfaction of the Owner.
- C. The Contractor shall patch, repair and/or replace all adjacent materials and surfaces damaged after the installation of new work at no expense to the Owner. All repair and replacement work shall match the existing in kind and appearance.

1.16 NOISE AND DUST CONTROL

- A. The Contractor shall take special measures to protect the residents, neighbors, and general public from noise, dust, and other disturbances by
 1. Keeping common pedestrian and vehicular circulation areas clean and

- unobstructed;
- 2. Insulating work area from occupied portions as far as possible; and
- 3. Sealing dust and fumes from contaminating occupied spaces.

1.17 TEMPORARY BARRICADES

A. The Contractor shall:

1. In addition to the weather protection during the months of November to March specified elsewhere, provide temporary watertight enclosures for openings in exterior walls and in roof decks when and as required to protect the Work from damage by inclement weather. Temporary enclosures shall be provided with adequate means of ventilation to prevent accumulation of moisture in the buildings.
2. Provide temporary wood doors for exterior entrances and elsewhere as required. Permanent door enclosures shall not be used as temporary enclosures.
3. Protect sills, jambs, and heads of openings through which materials are handled.
4. Protect decks and slabs to receive work by other trades from any soiling which will prevent proper adhesion of subsequent Work. Decks and slabs shall be left clean and free of blemishes at the time other trades begin the application of their work.
5. Protect concrete slabs to remain exposed and finished floors against mechanical damage, plaster droppings, oil, grease, paint, or other material which will stain the floor finish. Install and maintain adequate strips of building paper or other protection on finished floors in rooms where other trades will do future Work.
6. Protect all surfaces to receive work by other trades from any soiling which will prevent proper execution of subsequent work
7. Protect other areas, furniture, and private property of the residents and the Owner. Any areas damaged by the Contractor shall be restored to the original condition or compensated at the Contractor's expense.

B. When applicable, roof surfaces and waterproofed surfaces shall not be subjected to traffic nor shall they be used for storage of materials. Where some activity must take place in order to carry out the Work, adequate protection must be provided.

C. After the installation of any Work is completed, the Contractor shall be responsible for its protection and for repairing, replacing, or cleaning any such Work which has been damaged by other trades or by any other cause, so that all Work is in first class condition at the time of Substantial Completion.

1.18 TEMPORARY PROTECTIVE WALKWAYS

- A. The Contractor shall, at all times, leave an unobstructed way along walks and roadways and shall maintain barriers and lights for the protection of all persons and property in all locations where materials are stored or work is in progress.

1.19 TEMPORARY CONSTRUCTION FENCE

- A. The Contractor shall be responsible for providing and maintaining temporary fencing or barricades around the construction as may be necessary to assure the safety of all persons authorized or unauthorized. Such protective measures shall be located and constructed as required by local, state, and federal ordinances, laws, codes, or regulations.

1.20 SECURITY

- A. The Contractor shall be responsible for providing all security precautions necessary to protect the Contractor's and Owner's interests.
- B. Where excavation is involved, the Contractor shall be responsible for providing continuous watchmen service as necessary, to insure adequate protection of the general public.

1.21 TEMPORARY STORM WATER POLLUTION CONTROL

- A. Protect excavations, trenches, buildings and materials at all times from rain water, ground water, backing-up, or leakage of sewers, drains, or other piping, or from water damage of any origin. Provide all pumps, piping, coverings, and other materials and equipment as required by job conditions to accomplish this requirement.

1.22 WEATHER PROTECTION

- A. The Contractor shall provide temporary enclosures and heat to permit work to be carried on during the months of November through March in compliance with MGL c.149 §44G (d). These specifications are not to be construed as requiring enclosures or heat for operations that are not economically feasible in the opinion of the Owner. Without limitation this includes such items as excavation, pile driving, steel erection, erection of certain exterior wall panels, roofing, and similar operations.
- B. "Weather Protection" means the temporary protection of that Work adversely

- affected by moisture, wind, and cold by covering, enclosing, and/or heating. This protection shall provide adequate working areas during the months of November through March as determined by the Owner and consistent with the construction schedule to permit the continuous progress of all Work necessary to maintain an orderly and efficient sequence of construction operations. The Contractor shall furnish and install "Weather Protection" material and be responsible for all costs, including heating required to maintain a minimum of 40 degrees F. at the working surface. This provision does not supersede any specific requirements for methods of construction, curing of materials, or the applicable conditions set forth in the Contract Documents with added regard to performance obligations of the Contractor.
- C. Within 30 calendar days after award of the Contract, the Contractor shall submit in writing, to the Prime Designer for approval, three (3) copies of the proposed methods for "Weather Protection".
 - D. The Contractor shall assume the entire responsibility for weather protection during construction (until Substantial Completion), and shall be liable for any damage to any Work caused by failure to supply proper weather protection and proper ventilation.
 - E. Work damaged by frost shall be removed and replaced by and at the Contractor's expense and as directed by the Prime Designer.
 - F. It is to be specifically understood that the Contractor shall do no work under any conditions deemed unsuitable by the Contractor to the execution of the Work. This provision shall not constitute any waiver, release, or lessening of the Contractor's obligation to bring the Work to Substantial Completion within the period of time set forth in the Contract Documents.

1.23 WIND PROTECTION

- A. Should high wind warnings be issued by the U.S. Weather Bureau, the Contractor shall take every precaution to minimize danger to persons, to the Work, and to the adjacent property.

END OF SECTION

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Section 01.73.29
CUTTING AND PATCHING

9/9/2009

1.1 GENERAL SCOPE OF THE WORK

- A. Unless specified elsewhere, the Contractor shall be responsible for:
 - 1. All cutting and patching required for the project construction.
 - 2. Products and installation for patching and extending Work.
 - 3. Transition and adjustments.
 - 4. Repair of damaged surfaces, finishes, and cleaning.
 - 5. Coordination of any cutting and patching required by subtrades.
- B. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- C. The Contractor must comply with all safety laws and regulations of the Commonwealth of Massachusetts, the United States Government and local government agencies applicable to Work under this contract. The Contractor's attention is directed to the Commonwealth of Massachusetts, Department of Labor, Division of Occupational Safety Regulations.

1.2 RELATED SECTIONS

- A. This section supplements the General Conditions including but not limited to Article 4.3. of the General Conditions.
- B. Consult the individual sections of the specifications for specific items required under those sections.
- C. Section 01.74.13 - Progress Cleaning and Final Cleaning.
- D. Section 01.74.19 - Construction and Demolition Waste Management.

1.3 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting, including elements subject to damage or movement during cutting and patching. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.
- B. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the Prime Designer's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner

that would result in visual evidence of cutting and patching. Remove and replace visually unacceptable areas of cutting and patching at no additional cost to the Owner.

- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Beginning of cutting or patching means acceptance of existing conditions.
- E. After uncovering existing Work, assess conditions affecting performance of work.

1.4 PREPARATION

- A. Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
- B. Before proceeding, meet at the Project Site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- C. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.
- D. Close openings in exterior surfaces to protect existing work [and salvage items] from weather and extremes of temperature and humidity. Insulate duct work and piping to prevent condensation in exposed areas.
- E. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- F. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- G. Remove debris and abandoned items from area and from concealed spaces.
- H. Prepare surface and remove surface finishes to provide for proper installation of new work and finishes.

1.5 CUTTING

- A. Execute all cutting and fitting necessary to complete the Work.
- B. Where services are required to be remove, relocated, or abandoned, by-pass utility services, such as pipe or conduit, before cutting. Cut-off pipe or conduit in walls or partitions scheduled to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.
- C. Uncover work to install improperly sequenced work.
- D. Remove and replace defective or non-conforming work.
- E. Provide openings in the Work for penetration of mechanical and electrical work. Cut holes and slots as small as possible, nearly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover opening when not in use.
- F. Employ skilled and experienced workers to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- G. Cut rigid materials using power saw or core drill. Cut through concrete and masonry using a cutting machine, such as a carborundum saw or a diamond-core drill. Pneumatic tools shall not be allowed without prior approval.
- H. Cut existing construction using methods least likely to damage elements retained or adjoining construction. Where possible, review proposed procedures with the original Installer; comply with the original Installer's recommendations.
- I. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
- J. Comply with requirements of applicable Specification Sections where cutting and patching requires excavating and backfilling or patching of pavement or concrete.
- K. Do not cut structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.
- L. Do not cut operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.

- M. Perform cutting in a fashion that does not denigrate the energy performance of the building(s).

1.6 PATCHING

- A. Execute patching to complement adjacent, undisturbed finishes.
- B. Fit products together to integrate with other Work.
- C. Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.
- D. Perform patching in a fashion that does not denigrate the energy performance of the building(s).
- E. Restore work with new products in accordance with requirements of Contract Documents.
- F. Fit work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- G. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with appropriate material to full thickness of the penetrated element as necessary to maintain the required rating.
- H. Where new work abuts or aligns with existing, perform a smooth and even transition. Patch work to match existing adjacent work in texture and appearance. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
- I. Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used. Use materials whose installed performance will equal or surpass that of existing materials.
- J. Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
- K. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.

- L. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
- M. Where walls or partitions are to be removed, patch and repair voids left in floor, wall and ceiling surfaces where the existing construction is removed. Provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
- N. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch after the area has received primer and second coat.
- O. Patch, repair, or re-hang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
- P. Where cutting and patching involves plaster refer to applicable Sections for plastering requirements. In lieu of specific requirements, comply with the following:
 - 1. Comply with ASTM C 842
 - 2. Comply with manufacturer's instructions and install thickness and coats as indicated.
 - 3. Unless otherwise indicated, provide 3-coat work.
 - 4. Base Coat: Ready-mixed, sand aggregate gypsum plaster base.
 - 5. Finish Coat: Ready-mixed gypsum finish plaster.
 - 6. Finish gypsum plaster to match existing adjacent surfaces. Sand lightly to remove trowel marks and arises.

1.7 CLEANING

- A. In addition to cleaning specified in Section 01.74.13, clean all areas affected by the work of this Section including personal belongings affected by this work.
- B. Completely remove paint, mortar, oils, putty, and similar items.
- C. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.
- D. When cutting and patching in occupied units clean affected areas daily and or immediately after completion of the cutting and/or patching work.

END OF SECTION

CUTTING AND PATCHING

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Section 01.74.13
PROGRESS CLEANING - FINAL CLEANING
9/9/2008

1.1 SCOPE

- A. This section specifies the requirements for maintaining a clean and orderly work site during and at the completion of the Work.
- B. Pay special attention to work areas that affect occupied residents' spaces and public areas.

1.2 RELATED DOCUMENTS

- A. This section supplements Article 4.17 of the General Conditions.
- B. Consult the individual sections of the specifications for cleaning of Work installed under those sections.
- C. Section 01.73.29 - Cutting and Patching.
- D. Section 01.74.19 - Construction Waste Management and Disposal.

1.3 CLEANING DURING CONSTRUCTION

- A. Conduct all cleaning and disposal operations to comply with all federal, state, and local laws, regulations, codes, ordinances and by-laws.
 - 1. Do not burn or bury rubbish and waste materials on the site.
 - 2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 - 3. Do not dispose of wastes into streams or waterways.
- B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- C. Do not allow materials and rubbish to drop free or be thrown from upper floors, but remove by use of a material hoist or rubbish chutes.
- D. Maintain the Site free from accumulations of waste, debris, and rubbish.
- E. Do not leave debris in units.
- F. Provide on-site containers for collection of waste materials and rubbish.
- G. At the end of each day, remove and legally dispose waste materials and rubbish from site.

- H. Vacuum clean interior building areas when ready to receive finish painting, and continue vacuum cleaning on an as-needed basis until Substantial Completion.
- I. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
- J. Disposal of materials shall be in compliance with all applicable laws, regulations, ordinances, codes, and by-laws.

1.4 FINAL CLEANING

- A. Prior to submitting a request to the Prime Designer to certify Substantial Completion of the Work, the Contractor shall inspect all interior and exterior spaces and verify that all waste materials, rubbish, tools, equipment, machinery, and surplus materials have been removed, and that all sight-exposed surfaces are clean. Leave the Project clean and ready for occupancy.
- B. Unless otherwise specified under other sections of the Specifications, the Contractor shall perform final cleaning operations as herein specified prior to final inspection (**as is applicable for the Project scope**).
- C. Cleaning shall include all surfaces, interior and exterior, which the Contractor has had access to, whether new or existing.
- D. Employ experienced workmen or professional cleaners for final cleaning.
- E. Use only cleaning materials recommended by the manufacturer of the surface to be cleaned.
- F. Use cleaning materials which will not create a hazard to health or property and which will not damage surfaces.
- G. All broken or defective glass caused by the Contractor's Work shall be replaced at the expense of the Contractor.
- H. Remove grease, mastic, adhesive, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior surfaces. This includes cleaning of the Work of all finishing trades where needed, whether or not cleaning by such trades is included in their respective specifications.
- I. Clean and polish all new and existing glass and plastic glazing (if any) throughout the building(s), on both sides. Clean plastic glazing in accordance with the manufacturer's directions. This cleaning shall be completed by qualified window cleaners at the expense of the Contractor just prior to acceptance of the Work.

- K. Wash and polish all mirrors.
- L. Repair, patch, and touch up marred surfaces to the specified finish, to match adjacent surfaces.
- M. Polish glossy surfaces to a clear shine.
- N. Do the final cleaning of resilient floors and wood floors as specified under the respective sections of the Specifications.
- O. Leave all architectural metals, hardware, and fixtures in undamaged, polished conditions.
- P. Leave pipe and duct spaces, plenums, furred spaces and the like clean of debris and decayable materials.
- Q. In cleaning items with manufacturer's finish or items previously finished by a Subcontractor, care shall be taken not to damage such manufacturer's or Subcontractor's finish. In cleaning glass and finish surfaces, care shall be taken not to use detergents or other cleaning agents which may stain adjoining finish surfaces. Any damage to finishes caused by cleaning operations shall be repaired at the Contractor's expense.
- R. Broom clean exposed concrete surfaces and paved surfaces. Rake clean other surfaces of grounds.
- S. Ventilating systems - Replace filters and clean ducts, blowers, and coils if units were operated during construction.
- T. Owner's responsibility for cleaning commences at Substantial Completion.

END OF SECTION

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Section 01.74.19
CONSTRUCTION AND DEMOLITION WASTE
MANAGEMENT
09/30/19

1.1 DESCRIPTION OF WORK

- A. This section describes the requirements for the Contractor and all subcontractors to minimize construction waste and debris and to reuse, salvage, and recycle to the greatest extent possible.
- B. This section specifies certain wastes that are required to be recycled.
- C. This section includes a standard Waste Management Report Template (01.74.19.01).

1.2 RELATED SECTIONS

- A. 01.29.00 - Payment Procedures.
- B. 01.33.00 - Submittals.

1.3 WASTE MANAGEMENT GOALS WASTE_RECYCLING

- A. The Owner's waste management goals include increased recycling and conservation of materials. Construction and Demolition Wastes have been identified as a particular target for reuse and recycling, for several reasons.
- B. Required Recycling - Recycling is required for all of the items included in Section 01.74.19.01 if that particular material is expected to be part of the project's demolition and/or construction waste.

1.4 PRE-CONSTRUCTION WASTE MANAGEMENT REPORT SUBMITTAL

- A. Prior to any waste removal, the Contractor shall submit a completed Draft Pre-Construction Waste Management Report (01.74.19.01) to the Prime Designer and
- B. The following databases may be used to find recyclers/haulers for construction debris.
 - 1. Massachusetts Department of Environmental Protection
www.mass.gov/lists/massachusetts-landfills-transfer-stations-compost-sites-recycling-facilities.
 - 2. The GSA Environmental Strategies and Safety
www.wbdg.org/tools/cwm.php.

3. Recycling Works MA www.recyclingworksma.com
Searchable web-based directories of recycling facilities for common construction materials as well as re-purposing materials with remaining useful life, such as structurally sound kitchen cabinets, fixtures, appliances, doors and windows. For specified guidance on a material not yet listed in the directory, contact one of the recycling advisors info@recyclingworksma.com or by calling the hotline at (888) 254-5525.
4. For statewide contract recycling vendors with bona fide capabilities for porcelain (toilets) recycling:
New England Recycling (Taunton): Email kbrady@nerecycling.com
Phone: (508) 813-1278
EOMS Recycling Services (Brockton): Email dmilhomme@eomsrecycling.com Phone: (508) 587-9686
Republic Services (Auburn): Website: www.republicservices.com
Phone: (508) 721-2314
ACME Recycling (Springfield): Website: www.acmerecoycling.com
Phone: (413) 737-3112, and
ABC Disposal Service (New Bedford): Website: www.abcdisposal.com
Phone: (774) 930-8989

1.5 THE PRE-CONSTRUCTION WASTE MANAGEMENT REPORT

- A. The Contractor's Pre-Construction Waste Management Report submittal shall be reviewed as part of the submittal process. The Contractor's submittal portion may be handwritten.
- B. The Report shall include a summary of the proposed jobsite wastes to be generated, including types and approximate quantities of each material.
 1. Disposal options: The name of all landfill(s) and/or incinerator(s) proposed for trash disposal.
 2. In addition to the Information provided on the Report Form provide supplemental information advising the Prime Designer of the following:
 - a. Materials Handling Procedures: A brief description of how the Contractor proposes separating and stockpiling materials on site. What materials will be separated and how will they be temporarily stored.
 - b. Transportation: A description of the means of transportation of the recyclable materials (whether materials will be site-separated and hauled to designated markets, or whether mixed materials will be collected by a hauler and removed from the site and later separated for recycling). See the template (Form 01.74.19.01) at the end of this section.

1.6 WASTE MANAGEMENT IMPLEMENTATION

- A. Manager: The Contractor shall designate a specific person responsible for explaining the procedures for project recycling to Contractor's personnel and new workers. This person should also manage and coordinate all transportation of waste to recyclers and landfills and maintain records of materials leaving site and destinations.
- B. Clearly marked containers or areas- to identify where different materials are to be stored.

1.7 REPORTING REQUIRED AT TIME OF APPLICATION FOR PAYMENT

- A. The Schedule of Values shall include at least one line item representing the Waste Management requirements for this contract
- B. Application for Progress Payments: The Contractor shall submit with each Application for Progress Payment a Summary of Waste generated by the Project.
- C. Failure to submit this information shall render the Application for Payment incomplete and shall delay Progress Payments. The Summary shall be submitted on a form acceptable to the Owner and shall contain the following information:
 - 1. For each material recycled, reused, or salvaged from the Project, the amount (in tons or cubic yards), the date removed from the jobsite and the receiving party, Attach manifests, weight tickets, etc..
 - 2. The amount (in tons) of material landfilled from the Project, the location of the landfill, and delivery manifests, weight tickets, etc..
- D. The Prime Designers receipt and approval of all required Waste Management documentation shall be precedent to Final Payment.

END OF
SECTION

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REPORT 01.74.19.01

Pre-Construction Waste Management Report Form

Mandatory Waste Management Report					
Material Category		Disposed in Municipal Solid Waste Landfill	Diverted from Landfill By:		
			Recycling	Salvage	Reuse
Materials where Recycling is Mandatory in this Contract					
1	Concrete, concrete blocks and masonry units (CY)				
2	Uncoated asphalt, bricks, and concrete (CY)				
3	Packaging and packing materials (lbs)				
4	Fiber cement products including shingle and lapped siding, panels, etc. (lbs)				
5	Paint (gal)				
6	Glass (lbs)				
7	Plastics (lbs)				
8	Furnishings (type and quantity)				
9	New Carpet & pad constr. scraps(sq. yds)				
	Used clean Carpet and pad				
10	Insulation (lbs)				
11	Gypsum wallboard (lbs)				
12	Porcelain plumbing fixtures (lbs)or (number of fixtures)				
13	Clean dimensional wood (lbs)				
14	Ferrous Metals (lbs)				
15	Non-ferrous metals (lbs)				
16	Fluorescent light tubes				
17	Roofing Shingles or sheet plies(lbs)				
18	Green materials (land clearing debris, tree trimming etc (lbs)				
19	Loam- (test before shipping off site)				
20	Any other materials Refer to list in Section 01.74.19, item 1.3.B Distinguish materials for re-use as building components and those that are to be recycled for raw materials				

Total (In Weight/Quantity of Above):

This Form should be Stamped and Signed as approved by the Contractor before submitting to the Designer

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Section 01.77.00
PROJECT CLOSE-OUT PROCEDURES
1/21/2010

1.1 SCOPE

- A. This section lists the procedures required for the proper completion of this project including processing the Release of Retainage and making the Final Payment to the Contractor.
- B. Consult the Individual sections of the specifications for requirements affecting Project Close-Out.

1.2 RELATED DOCUMENTS

- A. This section supplements the General Conditions.
- B. Consult the individual sections of the specifications for specific items required under those sections.
- C. Section 01.26.00 - Contract modification Procedures.
- D. Section 01.29.00 - Payment Procedures
- E. Section 01.74.19 - Construction and Demolition Waste Management..

1.3 OCCUPANCY PERMIT - NOT USED

1.4 LETTERS OF COMPLIANCE - NOT USED

1.5 PARTIAL COMPLETION

- A. At the completion of Work within a Dwelling Unit, the Contractor may notify the Prime Designer that the Work within the unit(s) is Partially Complete. The Prime Designer, or a designee, shall conduct a thorough inspection of the Work. If the Dwelling Unit is actively occupied this inspection shall occur within 24 hours of any written request. The Prime Designer shall prepare a punch list, setting forth in accurate detail any items and additional items that are not acceptable or incomplete inside the dwelling unit. The Contractor shall coordinate all Subcontractors to achieve prompt completion of the punch list.
- B. Prior to requesting Partial Completion the Contractor shall make a thorough

- inspection of the Work. During this inspection the Contractor shall prepare a comprehensive list of all items remaining to be completed or corrected. This list shall include all remaining Contractor and Subcontractor items to be provided under the Contract Documents.
- C. The Contractor shall not be relieved of the responsibility to provide Contract items left off the Prime Designer's punch list.
 - D. If the Prime Designer determines that the Work within the dwelling unit is not Partially Complete, or not acceptable for the use for which it was intended, the Prime Designer shall inform the Contractor of those items that must be completed before the Prime Designer will prepare the punch list. Upon completion of those items, the Contractor shall again request the Prime Designer to prepare a punch list.
 - E. If the Contractor fails to request an inspection that Contractor will be responsible for the condition of the Work even if the Dwelling Unit is occupied.
 - F. The date of Substantial Completion for the entire contract and the start of all associated warranties shall not occur until work in all units is complete.
 - G. The Prime Designer shall prepare the Certificate of Substantial Completion in accordance with Article 9.6 of the General Conditions after the work in all Dwelling Units is complete.
 - H. Partial Payment of Retainage shall not be made until at least 65 days after the effective date of the final Certificate of Substantial Completion for the entire project.

1.6 SUBSTANTIAL COMPLETION

- A. Prior to requesting Substantial Completion as provided in Article 9.6 of the General Conditions the Contractor shall make a thorough inspection of the Work. During this inspection the Contractor shall prepare a comprehensive list of all items remaining to be completed or corrected. This list shall include all remaining Contractor and Subcontractor items to be provided under the Contract Documents.
- B. Upon completion of the items noted on the Contractor's list the Contractor shall notify the Prime Designer that the Work is Substantially Complete. The Prime Designer shall then conduct a similar thorough inspection. If the Prime Designer agrees that the Work is Substantially Complete, the Prime Designer will promptly make a thorough inspection and prepare a punch list, setting forth in accurate detail any items on the Contractor's list and additional items that are not acceptable or incomplete. The Contractor shall coordinate all Subcontractors to achieve prompt completion of the punch list.

- C. The Contractor shall not be relieved of the responsibility to provide Contract items left off of the Prime Designer's punch list.
- D. If the Prime Designer determines that the Work is not Substantially Complete, the Prime Designer shall inform the Contractor of those items that must be completed before the Prime Designer will prepare a punch list. Upon completion of those items, the Contractor shall again request the Prime Designer to prepare a punch list.
- E. When the punch list has been prepared, the Prime Designer will arrange a meeting with the Contractor and Subcontractors to identify and explain all punch list items and answer questions on work which must be done before final acceptance.
- F. The Prime Designer may revise the punch list, from time to time, to ensure that all items of Work are properly completed.
- G. The Prime Designer shall prepare the Certificate of Substantial Completion in accordance with Article 9.6 of the General Conditions.

1.7 RECORD DRAWINGS

- A. Consult the individual sections of the Specifications for the specific requirements of those sections. In cases of inconsistency the more stringent requirement, as directed by the Prime Designer, shall be required.
- B. Prior to final payment and completion, the Contractor shall submit all marked up As Built Drawings as required under other sections of the Specifications.

1.8 OPERATING AND MAINTENANCE INSTRUCTIONS

- A. Consult the individual sections of the specifications for the specific requirements for those sections and for further details and descriptions of the requirements.
- B. Prior to final payment and completion, the Contractor shall provide all Operating Manuals and Maintenance Instructions as required by the Contract Documents.
- C. OPERATING INSTRUCTIONS MANUAL
 - 1. Subcontractors, installers and suppliers shall furnish to the Contractor two sets of operating and maintenance instructions of all mechanical, electrical, and manually operated equipment furnished and installed by

them. Mechanical and electrical subcontractors shall furnish instructions as specified in their respective sections.

2. The Contractor shall collect all of the above instructions, bind them into two complete sets, and submit them to the Prime Designer who will deliver them to the Owner.
3. Submission of operating and maintenance instructions shall be a condition precedent to final payment.

D. INSTRUCTION OF OWNER'S PERSONNEL

1. Where specified in the individual sections of the specifications, the Contractor and Subcontractor shall instruct the Owner's personnel at the site, in the use and maintenance of equipment installed under the Contract.
2. Submission to the Prime Designer of a certificate of compliance to this requirement, signed by the Contractor and the Owner's Representative, shall be a condition precedent to final payment.

1.9 FINAL COMPLETION

A. RELATED REQUIREMENTS

1. The Contractor's attention is directed to Article 9.7 of the General Conditions and the Construction Handbook.

B. FULL RELEASE OF RETAINAGE (FINAL PAYMENT)

1. Upon completion of all work, and after receipt of all appropriate marked up As Built Drawings, Operating Manuals, Warranties, Guarantees, and Spare Parts required by the Contract Documents, the Prime Designer shall prepare the Certificate of Final Completion (Form 01.77.00.03) a copy of which can be found in the Construction Handbook or on the DHCD website. A sample of this form can be found at the end of this section.
2. This certificate shall be processed in accordance with the procedures described in the Construction Handbook.
3. The Contractor's signature on this Certificate shall be notarized.
4. The Contractor shall provide a final Application for Payment to complement the close-out process.

C. PARTIAL RELEASE OF RETAINAGE

1. If within 65 days after Substantial Completion, any of the items on the Prime Designer's punch list are not complete or if the Contractor has not provided the appropriate marked up As Built Drawings, Operating Manuals, Warranties, Guarantees or Spare Parts the Prime Designer shall assign a monetary value for each incomplete item as well as any other items as provided by M.G.L. c.30 §39K, and the Prime Designer shall prepare a Certificate for Partial Release of Retainage.
2. If the Prime Designer is required to prepare a Certificate for Partial

Release of Retainage (Form 01.77.00.02), the Contractor shall complete all remaining Work in accordance with the provisions of Article 9.7 of the General Conditions. A copy of this form can be found in the Construction Handbook or on the DHCD web site. There is also a sample at the end of this section.

3. The Contractor's signature on this Certificate shall be notarized.
4. The Contractor may make a request for additional releases of retainage when portions of the Work listed on the Prime Designer's punch list have been satisfactorily completed. Each request shall be accompanied by a new application for payment and a new signed and notarized Certificate for Partial Release of Retainage.
5. The Prime Designer's inspections, required to complete the additional payment applications described in subparagraph C4 above, are subject to provisions of subparagraph 9.7.5 of the General Conditions.
6. Upon completion of all remaining items, the Final Release of Retainage shall be processed in accordance with paragraph B above.

END OF SECTION

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CERTIFICATE OF SUBSTANTIAL COMPLETION

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF HOUSING & COMMUNITY DEVELOPMENT

Contractor _____	Owner _____	Housing Authority _____
_____	_____	_____
Phone _____	Phone _____	
Fax _____	Fax _____	
Development No _____	FISH No _____	
Contract for: _____		

Pursuant to the General, Supplementary, and Special Conditions of the Contract Documents relative to Partial or Total Occupancy, you are hereby notified that the Housing Authority has satisfied itself that the portion(s) of the above mentioned project, as hereinafter enumerated, is (are) ready for use and or occupancy:

Identify the Buildings and/or areas to be occupied and or used: _____

The Housing Authority, through its undersigned representative hereby accepts from the Contractor, subject to contract stipulations, said portion(s) of the Project, effective 12:00 Noon on:

INSERT DATE  the _____ day of _____ 20 ____

The Contractor will be relieved of responsibility for performing further Work or supplying further materials, equipment, or other items, in accordance with the General, Supplementary, and Special Conditions of the Contract Documents (relative to partial or total occupancy), except for the following work:

Append a complete list of all incomplete and/or unsatisfactory items of the Work, which in the opinion of this Housing Authority, are attributable to the fault, negligence, or oversight of the of the Contractor, any subcontractors, material suppliers, agents, servants, or employees.

NOTE: Attach one copy of the "Punch List" items to each copy of this document.

The Use or Occupancy of the building(s) or portion(s) of this project by the Housing Authority shall not:

- constitute acceptance of any Work not performed in accordance with the Contract Documents;
- relieve the Contractor of the liability to perform any Work required by the Contract but not completed at the time of Use and or Occupancy; nor
- relieve the Contractor of liabilities with respect to any express warranties or guarantees required by the Contract.

CERTIFICATION OF HOUSING AUTHORITY BOARD VOTE

Must be completed by the Owner

The _____ Housing Authority met on _____ And voted to approve this Certificate:

Certified By: _____, Contract Officer

Approved: Architect

Firm: _____

By: _____

Date: _____

Accepted: Contractor

Firm: _____

By: _____

Reviewed: Construction Advisor

Department of Housing & Community Development

By: _____

Date: _____

Approved: Director, Construction Management Unit

Department of Housing & Community Development

By: _____

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CERTIFICATE FOR PARTIAL RELEASE OF RETAINAGE

COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT *This form should originate with the Architect*

Contractor _____	Owner: _____	Housing Authority _____
_____	_____	_____
Phone _____	Phone _____	
Fax _____	Fax _____	
Development No _____	Period _____	
Contract for: _____	FISH No; _____	

THE PARTIES AGREE THAT THE STATUS OF THE CONTRACT IS AS FOLLOWS:

I. CONTRACT TIME

1. The Date of Substantial Completion is _____

2. The Date of Substantial Completion as Extended by Change Order is _____

3. The Actual Date of Substantial Completion is:..... _____

4. Overrun in Contract Time _____

II. CONTRACT SUM

1. The Original Contract Sum is \$ _____

2. The Sum of Approved Change Orders to Date is \$ _____

3. The Adjusted Contract Sum is \$ _____

LESS:

4. Sum of authorized payments to date: \$ _____

5. Sum of Moneitized Punch List..... \$ _____

6. Sum of other claims by Owner \$ _____

III. THAT APPLICATION FOR PAYMENT NO. _____ ISSUE & PAYABLE IN THE AMOUNT OF: \$ _____

Copy Attached

THE UNDERSIGNED CONTRACTOR HEREBY CERTIFIES THAT: *The Contractor should complete items 1-5 and certify below*

1. All Work, including work required under change order(s) _____ has been performed in accordance with the terms of the Contract.

2. All changes to the Work (except minor modifications and field adjustments) have been authorized in writing by the Owner.

3. All laborers and mechanics have been paid at least the minimum wage rates as set forth in the Contract, and

4. There have been no claims made for infringement of any patent.

5. By accepting the payment shown in line III the Contractor releases the Owner from any and all claims arising under the Contract except for those set forth in A - B below. However if the Owner does not pay the Contractor the full amount of the payment shown above, such reduction shall not affect the validity of this release. Rather, the amount not paid shall be considered as another claim asserted by the Contractor.

EXCEPTIONS: CONTRACTOR'S CLAIMS AGAINST OWNER

A. _____

B. _____

CERTIFIED: CONTRACTOR

In witness Whereof the Undersigned has signed and sealed this Instrument this _____ day _____ 20_____

Firm: _____

By: _____ Date: _____

Title: _____

State of _____ County of _____ On this ___ day of _____ 20_____

before me, the undersigned notary public, _____ personally appeared, proved to me through satisfactory evidence which was _____ to be the person whose name is signed on this document in my presence.

Notary Public: _____

My Commission Expires: _____

CERTIFICATION OF HOUSING AUTHORITY BOARD VOTE:

The _____ Housing Authority met on _____ And voted to approve this Certificate and Payment

Certified: _____, Contract Officer

APPROVED: ARCHITECT Firm: _____	REVIEWED: CONSTRUCTION ADVISOR Dept of Housing & Community Development	APPROVED: DIRECTOR CONST. MANAGEMENT UNIT Dept of Housing & Community Development
By: _____	By: _____	By: _____
Date: _____	Date: _____	Date: _____

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CERTIFICATE OF FINAL COMPLETION

COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT *This form should originate with the Architect*

Contractor _____	Owner: _____ Housing Authority
_____	_____
_____	_____
Phone _____	Phone _____
Fax _____	Fax _____
Development No _____	Period Ending _____
Contract for: _____	FISH No: _____

THE PARTIES AGREE THAT THE STATUS OF THE CONTRACT IS AS FOLLOWS:

I. CONTRACT TIME

1. The Date of Substantial Completion is..... _____

2. The Date of Substantial Completion as Extended by Change Order is..... _____

3. The Actual Date of Substantial Completion is:..... _____

4. Overrun in Contract Time _____

II. CONTRACT SUM

1. The Original Contract Sum is \$ _____

2. The Sum of Approved Change Orders to Date is..... \$ _____

3. The Adjusted Contract Sum is \$ _____

LESS:

4. Sum of authorized payments to date:..... \$ _____

5. Sum of other claims by Owner:..... \$ _____

III. THAT APPLICATION FOR PAYMENT NO. _____ IS DUE & PAYABLE IN THE AMOUNT \$ _____

Copy Attached

THE UNDERSIGNED CONTRACTOR HEREBY CERTIFIES THAT: *The Contractor should complete items 1-5 and certify below*

1. All Work, including work required under change order(s) has been performed in accordance with the terms of the Contract.

2. All changes to the Work (except minor modifications and field adjustments) have been authorized in writing by the Owner.

3. All laborers and mechanics have been paid at least the minimum wage rates as set forth in the Contract, and

4. There have been no claims made for infringement of any patent.

5. By accepting the payment shown in line III the Contractor releases the Owner from any and all claims arising under the Contract.

CERTIFIED: CONTRACTOR

In witness Whereof the Undersigned has signed and sealed this Instrument this _____ day of _____ 2000

Firm: _____

By: _____ Date: _____

Title: _____

State of _____ County of _____ On this _____ day of _____ 2000 before me, the undersigned notary public, _____ personally appeared, _____ proved to me through satisfactory evidence which was _____ to be the person whose name is signed on this document in my presence.

Notary Public: _____

My Commission Expires: _____

CERTIFICATION OF HOUSING AUTHORITY BOARD VOTE:

The _____ Housing Authority met on _____ And voted to approve this Certificate and Payment

Certified: _____ Contract Officer

APPROVED: ARCHITECT Firm: _____	REVIEWED: CONSTRUCTION ADVISOR Dept of Housing & Community Development	APPROVED: DIRECTOR CONST. MANAGEMENT UN Dept of Housing & Community Development
By: _____	By: _____	By: _____
Date: _____	Date: _____	Date: _____

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SECTION 01.78.39
PROJECT RECORD DRAWINGS
02/01/2010

1.1 GENERAL REQUIREMENTS

- A. This section specifies the requirements for maintaining and preparing Projects Record Drawings during and at the completion of the Work.
- B. Record Drawings shall consist of all the Contract Drawings.

1.2 RELATED DOCUMENTS

- A. This section supplements the General Conditions.
- B. Consult the individual sections of the specifications for cleaning of Work installed under those sections.
- C. Section 01.29.00 - Payment Procedures.
- D. Section 01.77.00 - Project Close-Out.

1.3 PROCEDURES DURING CONSTRUCTION

- A. From the sets of drawings furnished by the Owner, the Contractor shall reserve one set for record purposes. From this set, the Contractor shall detach and furnish, at no charge to the Mechanical and Electrical Subcontractors the drawings of their portion of the Work for the same purpose.
- B. The Contractor and the above Subcontractors shall keep their marked up As Built set on the site at all times and note on it in colored ink or pencil, neatly and accurately, at the end of each working day, the exact location of their work as actually installed. This shall include:
 - 1. The location and dimensions of underground and concealed Work, and any architectural, mechanical or electrical variations from the Contract Drawings.
 - 2. All changes, including those issued by Addendum, Change Order or instructions by the Prime Designer shall be recorded.
- C. Marked up As Built drawings shall be prepared for the entire project and include all Work, including but not limited to:
 - 1. The location of all underground utilities and appurtenances referenced to permanent surface improvements, both horizontally and vertically at ten

- (10) foot intervals and at all changes of direction (if applicable for the Project).
2. The location of all internal utilities and appurtunces, concealed by finish materials, including but not limited to valves, coils, dampers, vents, cleanouts, strainers, pipes, junction boxes, turning vanes, variable and constant volume boxes, ducts, traps, and maintenance devices.
 3. The location of these, items shall be shown by offsets to structure and drawing grid lines.
- D. The tolerance for the actual location of these items on the marked up As Built Drawings shall be plus or minus two (2) inches.
- E. Each item shall be referenced by showing a tag number, areas served, and function on the marked up As Built drawing
- F. The Prime Designer may periodically inspect the marked up As Built drawings at the site. The proper and current maintenance of the information required on these drawings shall be a condition precedent to approval of the monthly applications for payment.

1.4 PROCEDURES AT COMPLETION

- A. At Substantial Completion the Contractor shall submit the complete set of marked up As Built drawings to the Prime Designer. The Contractor shall check all marked up As Built prepared by subcontractors and certify in writing on the title sheet of the drawings that they are complete and correct, prior to submission to the Prime Designer.
- B. The Prime Designer shall review the marked up As Built drawings and verify by letter to the Owner that the Work is complete. The Prime Designer shall incorporate all changes onto to original drawings.
- C. The Contractor may make a written request for copies of the completed Record Drawings. The Contractor shall reimburse the Owner directly for the cost of printing of any requested Record Drawings.
- D. Submission of accurate marked up As Built drawings and their approval by the Prime Designer shall be a condition precedent to final payment.

END OF SECTION

SECTION 22 00 00
Plumbing

(Filed Sub-Bid)

1.1 DESCRIPTION

- A All of the Contract Documents, including General and Supplementary conditions and Division 0 – Bidding Documents, Contract Forms and Conditions of the Contract and Division 1 – General Requirements, apply to the work in this Section.
- B Carefully examine all the Contract Documents for requirements which affect the work of this Section. The exact scope of this Section cannot be determined without a thorough review of all specifications sections and other Contract Documents.
- C Where referred to, Standard Specifications, Recommendations of Technical Societies, and/or Manufacturer's Associations, plus Codes of Federal, State, and Local Agencies shall include all amendments current as of date of issue of these specifications.

1.2 REQUIREMENTS FOR SUBMITTING FILED SUB-BID

- A. Sub-bids shall be submitted for the Work of this Section in accordance with the provisions of M.G.L. c.149 §§44A-J. The time and place for submission of sub-bids are set forth in the **Advertisement**. The procedures and requirements for submitting sub-bids are set forth in the **Instructions to Bidders**.
- B. Sub-bidders must be DCAMM Certified in the listed trade and shall include a Current DCAMM sub-bidder Certificate of Eligibility and a signed DCAMM Sub-bidder's Update Statement with the bid
- C. Specification requirements for the Filed Sub-bid "Plumbing" include all of the following listed Specification Sections in their entirety.

SECTION 22 00 00 01 - PLUMBING

- D. The Work of this Section is shown on Drawings
P-1
- E. SUB-SUBS

1. Sub-sub bids are required for this Section. Sub-Bidders shall include the appropriate information for the list of sub sub-bid Class of Work noted below in this paragraph. NOT APPLICABLE
2. If the Filed Sub-Bidder customarily performs the above Work with its own workforce, the Sub-Bidder should list its own name and trade and leave the dollar amount blank.
3. If the Filed Sub-Bidder does not customarily perform the Classes of Work with its own workforce, the Sub-Bidder should list the name of the contractor performing the work, the trade and insert a dollar amount.

END OF SECTION

SECTION 22.00.01

PLUMBING
(FILED SUB-BID)

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include General Conditions and applicable parts of Division 1 as part of this Section.
- B. Examine all other Sections of the Specifications for any Requirements that affect Work of this Section, whether or not such Work is specifically mentioned in this Section.
- C. Coordinate Work with that of all other Trades affecting, or affected by, Work of this Section. Cooperate with such Trades to assure the steady progress of all Work under the Contract.

1.02 SCOPE OF WORK

- A. Work in this Section includes all labor, materials, equipment and services necessary to furnish completely and install all Plumbing Systems as specified herein, and in general as follows:
 - 1. Disconnect, make safe, cut and cap, and demolish existing equipment, piping and appurtenances as may be required to accommodate the new work. This Contractor shall be responsible for removal and disposal of all debris generated by the demolition of the existing plumbing systems.
 - 2. Hot and cold-water distribution System, including, piping, valves, insulation and associated accessories.
 - 3. Gas piping Systems.
 - 4. Venting of all gas-fired equipment, including equipment furnished and installed under other Sections of the Specification.
 - 5. Electric water heaters.
 - 6. Gas-fired water heaters. **(ALTERNATE #1)**
 - 7. Operating devices, controls, and associated wiring.
 - 8. Piping Systems identification
 - 9. Testing and sterilization.
 - 10. Operating instructions, maintenance manuals, and Record Drawings.
 - 11. Obtain and pay for all inspections, licenses, permits, and approvals required by Governing Authorities and install all work in compliance thereof.
- B. The Work of this section is shown on Drawing **P-1** and **P-2**.
- C. Examine all Project Documents for any Requirements that affect the Work of this Section, whether or not such Work is specifically mentioned in this Section.

- D. This Contractor shall ensure that hot and cold water are restored to each unit at the end of each day. In the event that this Contractor is unable to complete the work, this Contractor shall provide temporary hot and cold water until such time as the new installation is in operation and tested by the Contractor.

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following Work is not included in this Section but is to be performed by other Trades as specified within the other Sections.
1. Cutting and patching shall be performed by Trades specializing in the specific surfaces affected, i.e.: carpentry, masonry, metals, etc.
 2. Flashing of all Plumbing System roof penetrations.
 3. Electrical power wiring.

1.04 INTENT

- A. All Work shall be in accordance with the arrangement, details, and locations, as indicated on the Contract Drawings, Reference Drawings and any supplemental Addenda, Bulletins or Drawings issued by the Architect. Layouts are diagrammatic and final arrangement of equipment and piping shall suit field conditions. Install all necessary fittings and equipment offsets required to meet job conditions. Work installed in a manner contrary to that shown on the Drawings, or interfering with the Work of another Trade, shall be removed and reinstalled when so directed by the Architect. Discrepancies and questionable points shall be immediately reported to the Architect for clarification.

1.05 CODES, REGULATIONS, AND STANDARDS

- A. All Work shall be installed in compliance with the governing Codes, Regulations, and Ordinances. It shall be the responsibility of this Contractor to familiarize himself with all governing Codes, Regulations, and Ordinances and report any non-compliance of the Plans and Specifications to the Architect, prior to entering into a Contract. All above Requirements shall take precedence over the Plans and Specifications. These Requirements are minimum criteria and no reductions to the quality or capacity of the Systems that may be permitted by Code will be allowed without written permission of the Architect.
- B. All workmanship, methods, and materials shall meet the highest standards of the Trade and, in general, shall conform to the standards of the following associations:

American Standards Association (ASA)
American Society of Mechanical Engineers (ASME)
National Board of Fire Underwriters (NBFU)
Standard of Underwriters Laboratories (UL)
American Society of Testing Materials (ASTM)
National Electric Code - NFPA 70 (NEC)
National Fire Protection Association (NFPA)
Occupational Safety and Health Act (OSHA)
American National Standards Institute (ANSI)
Building Officials and Code Administrators (BOCA)
American Society of Sanitary Engineering (ASSE)
American Society of Plumbing Engineers (ASPE)
Massachusetts State Building Code (780CMR)
Massachusetts State Plumbing and Gas Codes (248CMR)
Fitchburg Building Regulations and Ordinances

- C. Where the contract documents indicate more stringent requirements than the above codes and ordinances, the Contract Documents shall take precedence.

1.06 DRAWINGS AND CONFLICTS IN THE WORK

- A. The Drawings and Specifications are intended to be complementary. Any materials shown or specified in one, but not in the other, reasonably implied and usually included under good industry practice and/or required by applicable Codes and Regulations for the proper and safe completion and operation of the Work described herein, shall be furnished and installed by this Contractor at no additional cost to the Owner. Drawings show general arrangement of equipment and are not intended to indicate the exact installation dimensions.
- B. Any conflicts and/or non-compliance of the Plans and Specifications apparent at the time of the start of the project shall be brought to the attention of the Architect and/or Engineer prior to entering into a contract.

1.07 EXCHANGE OF INFORMATION AND COORDINATION

- A. All Work covered by this Section of the Specifications shall not be installed without first coordinating the installation of same with all other Trades and the General Contractor. This Contractor shall, at his own expense, relocate any of his Work should it interfere with the proper installation and/or operation of the Work to be installed by other Trades and by the General Contractor.
- B. Particular attention shall be directed to the coordination of this Work with all Work of other Trades which is to be installed in the ceiling areas. Coordinate, with all other Trades, the Work in suspended ceiling areas to insure adequate space for the installation of all Work of all Trades, prior to installation.
- C. Coordination of this Work with all other Trades will require that this Contractor attend on-site coordination meetings and develop coordination Drawings so as to ensure that all Trades will be provided with adequate space to install their Work.
- D. Furnish to the General Contractor, and all other Contractors, all information relative to the Work of this Section that will affect them, sufficiently in advance, so that they may plan their Work and installation accordingly.
- E. In the case of failure on the part of this Contractor to provide proper information, as indicated above, sufficiently in advance, this Contractor will pay for all back-charges incurred by the General Contractor and other Contractors for the modification and/or relocation of any portion of their Work already performed in conjunction with this Contract due to this Contractor's delay or for having given incorrect information.
- F. Obtain from all other Trades all information relative to the Work covered by this Section of the Specifications, which this Contractor is to execute in conjunction with the installation of the Work of the other Trade(s).
- G. In the event that conflicts, if any, cannot be settled rapidly and amicably between the affected Trades, with the Work proceeding in a skillful and competent manner, the Architect shall decide which Work is to be relocated and his judgment shall be final and binding.

1.08 WORKMANSHIP

- A. The entire Work provided in this Specification shall be constructed and finished, in every respect, in a skillful, competent, and substantial manner. It is not intended that the Drawings shall show

every component, pipe, and detail, but this Contractor shall furnish and install all such parts as may be necessary to complete the Work in accordance with governing Codes and Regulations, the best Trade practices, and to the satisfaction of the Architect, Engineer and the Owner, at no additional cost to the Owner.

1.09 SITE INVESTIGATION

- A. It shall be the responsibility of the Bidders to acquaint themselves with the available information, before submitting their Bid. Bidders should visit the site and acquaint themselves with the existing conditions and shall study all Architectural, Structural, Mechanical and Electrical Drawings, as well as the Specifications. The Bidders shall fully inform themselves of all local and state Code Requirements. Bidders must report any conflicts and/or non-compliance of the construction documents to the Architect for review prior to submitting their bid.

1.10 TAXES AND INSURANCE

- A. This Contractor shall include in his Bid, applicable federal, state and local taxes and the premiums of the insurance required by the General Conditions and Supplementary General Conditions of the Contract.

1.11 PERMITS AND INSPECTIONS

- A. This Contractor shall obtain and pay for all the permits required for this Section of the Work. He shall also obtain and pay for all the inspections and tests required. Defects discovered in Work, materials, and/or equipment shall be replaced at no cost to the Owner, and the inspection and test shall be repeated until no defects are discovered.
- B. Availability of Record Drawings shall be a prerequisite to scheduling an Engineer's rough or final inspection of this Work and said Drawings and Original Contract Documents will be used in checking completion of the Work. For rough inspections, the Contractor's red-line mark-up drawings will be sufficient.
- C. Non-availability of Record Drawings or inaccuracies therein may be grounds for cancellation or postponement of any scheduled Engineer's inspection of the Work until such time as the availability or discrepancy has been corrected.

1.12 CONTRACT COST BREAKDOWN

- A. At the start of construction, submit a breakdown of material and labor costs to aid the Architect in determining the value of the Work installed, as the job progresses. The cost breakdown shall itemize categories of materials or portions of Systems, as may be the case, to place a value on the Work as it is installed.
- B. No requisitions will be paid until after the breakdown is approved by the Architect.

1.13 GUARANTEE

- A. Unless otherwise noted, all materials, items of equipment and workmanship furnished under this Section shall carry the standard warranty against all defects in material and workmanship for a period of not less than one (1) year from the date of final acceptance of the Work. Any fault due to defective or improper material or workmanship which may develop within that period, shall be made good, forthwith, by and at the expense of this Contractor, including all other damage done to areas, materials and other Systems resulting from this failure.
- B. This Contractor shall guarantee that all elements of the Systems are of sufficient capacity to meet the specified performance Requirements as set forth herein or as indicated.

- C. Upon receipt of notice from the Owner of failure of any part of the Systems during the guarantee period, the affected part or parts shall be promptly replaced by this Contractor, at no charge to the Owner.
- D. Before the final payment is made, this Contractor shall furnish a written guarantee covering the above Requirements.

1.14 MATERIALS

- A. Materials shall be the best of their respective kinds and in full accord with the most modern mechanical construction. All materials shall be new and approved for use in Massachusetts.
- B. All materials necessary to make the installation complete in every detail shall be furnished and installed under this Contract, whether or not specifically shown on the Drawings or specified herein.
- C. It is the intent of the Specifications that one manufacturer be selected, not a combination, for any particular classification of materials.
- D. Where materials, equipment apparatus, or other products are specified by manufacturer, brand name, type or catalog number, such designation is to establish the standard of desired quality and style and shall be the basis of the Bid.

1.15 MATERIALS AND EQUIPMENT HANDLING

- A. This Contractor shall do all handling of his materials and equipment and the resulting cleanup, at his expense, in a safe and a satisfactory manner. Special attention shall be paid to the protection of life and property and the equipment or apparatus handled, and any corresponding damages shall be replaced, repaired, or paid for by this Contractor. This Contractor shall provide all rigging, hoisting, and staging required to complete the Work of this Section, unless specifically noted otherwise.
- B. Provide, maintain, and remove safe and adequate interior and exterior staging, scaffolding, hoists, and all other related equipment necessary for proper and complete execution of the Work of this Section in accordance with the requirements of the Contract Documents.
- C. Staging, scaffolding, hoists, and all other related equipment shall comply with all applicable Federal, State, and Local regulations and codes.
- D. Staging, scaffolding, hoists, and all other related equipment shall be maintained to complete the Work, and removed when no longer required.

1.16 MAINTENANCE AND PROTECTION OF MATERIALS

- A. This Contractor shall be responsible for the maintenance and protection, from loss or damage of all causes, of all equipment, materials, and tools supplied by him and stored or installed on the job site, until final acceptance of the Project by the Owner.
- B. This Contractor shall store his materials and equipment in the location designated by the Owner or Architect and maintain the storage area in a clean and safe condition.
- C. This Contractor, at his own expense, shall clean, patch and repair any material and finishes of the building or its contents damaged during the execution of this Contract. Patches and repairs shall be performed by Trades specializing in the specific surfaces affected.

1.17 SUBMITTALS

- A. Submit one complete package of Manufacturer's data sheets for all products, materials, equipment, and accessories intended to be used in the construction of the Systems in accordance with this Section and the provisions of Section 013300, Submittals.
1. Shop Drawings and Material Data Sheets shall be submitted in one complete package. Incomplete or partial submittals will not be accepted or reviewed.
 2. Multiple separate submittals submitted electronically through a construction software program (i.e. ProCore) will not be accepted. The operator of the software program shall receive, organize, and compile all cover sheets and manufacturer's data sheets into one complete package for submittal to the Engineer.
 3. Material Data Sheets shall be organized in a sequence identical to these specifications.
 4. Shop Drawings and Material Data Sheets shall be marked to indicate all specific sizes, capacities, materials, gauges, thicknesses, coatings, finishes, colors, models, optional equipment, and accessories. Shop Drawings and Material Data Sheets not marked as such may not be accepted or reviewed.
 5. Material Data Sheets shall be specific to the manufacturer and product being submitted. Brochures or sales sheets will not be accepted or reviewed.
 6. All Shop Drawings and Material Data Sheets shall be reviewed by the General Contractor for correctness, completeness, and compliance with the Contract Documents, and shall be stamped as such by the General Contractor prior to submission to the Architect or Engineer for review.
 7. Review of incorrect, incomplete, or rejected submittals which require resubmission shall be paid for by this Contractor.
 8. Shop Drawings and Material Data Sheets shall be submitted with sufficient time for the General Contractor, Architect, and Engineer to review. Be advised that MGL Chapter 30, Section 39P allows the Engineer the right to a 30-day review period. This applies to all submittals, whether the original submission or any subsequent revisions and resubmittal(s) thereto.
 9. All products, materials, equipment, and accessories must be approved prior to installation.
 10. Delays in the Work caused by incorrect, incomplete, rejected, or delays in submitting Shop Drawings and/or Material Data Sheets shall be borne by this Contractor.
- B. The approval of products, materials, equipment, or accessories does not relieve this Contractor from the responsibility of Submittal errors in details, sizes, colors, quantities, and dimensions which deviate from the Specifications, Contract Drawings, and/or job conditions, as they exist.
- C. If products, materials, equipment, or accessories are substituted by this Contractor for those specified and such substitution necessitates changes in any mechanical or electrical equipment, or alteration to connections, piping supports, or construction, same shall be provided by this Contractor at no additional cost to the Owner.
- D. The Architect's permission to make substitutions shall not relieve this Contractor from full responsibility for the Work.

- E. Changes to Work already performed, made necessary by delays in submittal approval, are the responsibility of this Contractor.

1.18 OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS

- A. Provide operating instructions to the Owner's designated representative, with respect to operating and maintenance procedures, for all equipment and Systems installed under this Section. Operating instructions shall be given by the manufacturers' representatives. The cost of such instruction, up to a full four (4) hours, shall be included in the Contract price.
- B. At the completion of the Project, turn over to the Architect two (2) complete Maintenance Manuals containing the following:
1. Contractor letter of guarantee.
 2. Copy of fully executed permit(s).
 3. Hard copy of approved As-Built Drawings.
 4. DVD of approved As-Built Drawings in PDF and AutoCad format.
 5. Complete approved submittals of all materials and equipment installed.
 6. Names, addresses and telephone numbers of all suppliers of the materials and equipment.
 7. Warrantees on all equipment.
 8. Preventative maintenance instructions for all Systems.
 9. Spare parts list of all equipment and System components.
 10. Spare parts kits as may be required by governing Codes, Regulations, and Ordinances. (i.e backflow preventer per 310CMR Section 22.22(4)(c)).
 11. Disinfection and backflow preventer test results.
 12. Other documentation of permits, inspections, tests, etc. as applicable.
- C. Each manual shall be typewritten and bound under a separate hardcover 3-ring binder and will be reviewed by the Architect. The manuals shall be clearly and permanently identified on the cover and binding with the name of the Project.
- D. Availability of Record Drawings shall be a prerequisite to scheduling the Engineer's final inspection of this Work.
- E. Refer to Section 017700, Project Closeout, for general provisions covering Project closeout procedures.

1.19 CLEANING SYSTEMS

- A. Before the Systems are accepted, all equipment shall be thoroughly cleaned to remove all dust, dirt and/or other foreign matter.

- B. After the installation is complete, equipment with factory-finished surfaces shall be cleaned and damaged or scratched spots shall be touched up with the same type and color paint applied at the factory.
- C. All equipment that is to receive finish paint by the Painting Contractor shall be cleaned by this Contractor and left ready to have surfaces prepared to receive paint.

1.20 RUBBISH REMOVAL

- A. At the completion of the Work, or when ordered by the General Contractor or the Architect, this Contractor shall remove from the property, all the rubbish and waste materials belonging to him. Keep the job site free from the accumulation of waste materials and rubbish; premises must be maintained in a clean condition.

1.21 TEMPORARY STRUCTURES

- A. This Contractor shall provide, on the premises and where directed by the Architect, shall maintain in good condition, and shall remove when directed, suitable and substantial watertight sheds in which he shall store all his materials and equipment.

1.22 TEMPORARY SERVICES

- A. All water, electricity, fire protection and sanitary facilities required for safe and efficient construction during normal working hours shall be furnished in accordance with the General Requirements and Supplementary General Requirements.

1.23 TESTS

- A. Furnish all labor, materials, instruments, supplies, and services and bear all cost for the accomplishment of the tests herein specified or required by governing Authorities. Correct all defects appearing under test, repeat the tests until no defects are disclosed, and leave the equipment clean and ready for use.
- B. Perform any tests, other than herein specified, which may be specified by legal authorities or by agencies to whose Requirements this Work is to conform.
- C. Dispose of test water and wastes after tests are complete, in a manner satisfactory to the Architect and in accordance with governing Regulations.
- D. This Contractor shall coordinate and facilitate all inspections and tests required by Codes or the Authorities Having Jurisdiction.

1.24 EQUIPMENT ACCESS REQUIREMENTS

- A. All Work shall be installed so that all parts requiring inspection, operation, maintenance and repair are readily accessible. Minor deviations from the Drawings may be made to accomplish this, but changes of magnitude shall not be made prior to written approval from the Architect.
- B. Furnish access panels as required to permit access for adjustment, removal and the replacement and servicing of all equipment, and all other items requiring maintenance and/or adjustment.
- C. Access panels shall be installed by the General Contractor.
- D. Coordinate the exact location of access panels in all finished spaces with the Architect.

1.25 INSTALLATION REQUIREMENTS

- A. This Contractor shall comply with all the governing Codes, Regulations, and Ordinances of all legally constituted Authorities having jurisdiction over the whole or any part of the Work herein specified. Governing Codes and Regulations supplement this Specification and shall take precedence in any case of conflict.
- B. All equipment and materials furnished in connection with the installation shall be new and shall be furnished and installed in accordance with these Specifications and the Manufacturer's requirements.
- C. All piping that is to receive paint shall not have any identifying labels, tags, markings, etc. (except for UL, FM, and code required nameplates) which would interfere with the preparation and painting of the surfaces.
- D. All piping shall be installed concentrically within any floor, ceiling or wall penetration so as to allow for proper sealing of the penetration while maintaining the sealant flush with the adjoining surfaces.

1.26 ELECTRICAL POWER AND CONTROL WIRING

- A. This Contractor shall provide to the General Contractor wiring diagrams for all equipment furnished under this Section for which electrical power wiring is to be installed by the Electrical Contractor.
- B. This Contractor is responsible for furnishing and installing all operating and control devices and associated control wiring as may be required to provide fully functional and operational systems.

PART 2 - PRODUCTS

2.00 PRODUCT APPROVAL

- A. All piping, fittings, materials, equipment and appurtenances to be installed under this Section of the Work shall be approved for use in Massachusetts in accordance with 248CMR.
- B. Where materials, equipment, apparatus, or other products are specified by manufacturer, brand name, type or catalog number, such designation is to establish the standard of desired quality and style and shall not be construed as fulfilling the requirements of 248CMR.
- C. It shall be the responsibility of this Contractor to ensure that all items submitted to the Engineer to be installed in association with this Work comply with all requirements of 248CMR.
- D. Approval by the Engineer of items submitted does not relieve this Contractor from the responsibility of complying with the requirements of 248CMR.
- E. Installed items which do not meet the requirements of 248CMR shall be removed and replaced with approved products by this Contractor at no additional cost.

2.01 PIPE AND FITTINGS

A. Domestic Water Piping

- 1. All domestic water piping inside the building, except as hereinafter specified, shall be Type "L" hard-drawn copper tubing, with soldered joint cast brass or wrought copper fittings. Pipe, fittings, and solder shall be "lead free".

2. Joining of copper tubing to dissimilar metals shall be accomplished using dielectric, brass or stainless steel fittings. The use of a dielectric may require the installation of a bonding jumper between the two metallic pipes. The bonding jumper shall be sized and installed by a licensed electrician.

B. Gas Piping

1. Gas and gas train vent piping shall be Schedule 40 steel or wrought iron, complying with ANSI Standard B36.10, ASTM A53 or ASTM A106. Fittings shall be threaded malleable iron complying with ASME B16.3. All gas pipe 3" and larger shall be welded. Welding outlet fittings shall conform to ASTM A53. Condensate/sediment traps shall be installed at all points in accordance with the requirements of all applicable Codes, and at the gas inlet of each piece of gas-fired equipment.
2. Joining of steel or wrought iron pipe to dissimilar metals shall be accomplished using dielectric, brass or stainless steel fittings. The use of a dielectric may require the installation of a bonding jumper between the two metallic pipes. The bonding jumper shall be sized and installed by a licensed electrician.

C. Direct Vent Piping

1. Direct vent exhaust piping shall be Schedule 40 solid core CPVC complying with ASTM F441 with solvent welded fittings complying with ASTM F439 and ASTM F493. Furnish and install vent termination from equipment manufacturer. All piping shall be installed in strict accordance with the manufacturer's installation instructions and guidelines regarding clearance from windows, doors, exterior vents, etc.
2. Direct vent combustion air piping shall be Schedule 40 solid core PVC complying with ASTM D1785 or D2665 with solvent welded fittings complying with ASTM D2466 or D2665. All piping shall be installed in strict accordance with the manufacturer's installation instructions.
3. All piping shall be identified as to contents and direction of flow in intervals not exceeding ten (10) feet, at each change in direction, and on both sides of penetrations through walls, floors, and/or ceilings.
4. All systems identification materials shall meet ANSI standard A13.1-1996 and be as manufactured by Seton Name Plate Corporation or approved equal.
5. Pipe markers shall be set mark type pre-molded acrylic plastic, snap on markers either 8" or 12" long with overlap. The background, field and legend colors and letter sizes shall be per ANSI A13.1 – 1996 standards.

2.02 VALVES

A. General

1. Furnish and install valves, where indicated on Drawings or specified, so located that they may be operated, repaired or replaced with a minimum effort and repacked under pressure.
2. The basic system of valves (i.e., gate, ball, check for water service) shall be of one manufacturer.

B. Domestic Water System Valves

1. All valves shall be "lead free".
2. Shut-off valves (ball) shall be furnished and installed on branch connections to mains, connections to each group of fixtures, fixtures fed separately from mains, connections to equipment, and where shown on the Drawings. All valves shall be brass and of 300 C.W.P. design.
3. Drain valves shall be installed to drain the water from all sections of the hot and cold piping. Where required, furnish and install ½" brass ball valves with hose connection and cap with chain on each drain.

C. Gas System Valves

1. Gas cocks shall be furnished and installed at connection to each piece of equipment, at each riser and where shown on the Drawings.
2. Gas cocks shall be brass body tee handle types with threaded ends manufactured in accordance with AGA Requirements.

2.03 PIPE HANGERS, SUPPORTS, AND CHANNELS

- A. All piping shall be rigidly supported from the building structure by means of approved hangers and supports. Pipes shall be supported so as to maintain the required grading and pitching of lines, to prevent vibration and to secure piping in place; they shall be arranged so as to provide for proper expansion and contraction of pipe.
- B. Maximum spacing of hangers on horizontal runs of pipe shall be in accordance with the following:
- | | | | |
|----|---------|-----------------|-------------|
| 1. | Copper: | 1¼" and smaller | 6'-0" o.c. |
| | | 1½" and larger | 10'-0" o.c. |
| 2. | Steel: | 1¼" and smaller | 6'-0" o.c. |
| | | 1½" and larger | 10'-0" o.c. |
| 3. | PVC: | 1½" and smaller | 3'-0" o.c. |
| | | 2" and larger | 4'-0" o.c. |
| 4. | CPVC | 1" and smaller | 3'-0" o.c. |
| | | 1¼" and larger | 4'-0" o.c. |
- D. If Codes having jurisdiction or manufacturers' installation instructions require closer spacing, the hanger spacing shall be as required by Code in lieu of the foregoing. Provide hangers at all changes in direction and on both sides of concentrated loads (pumps, valves, strainers, regulators, etc.).
- E. All horizontal piping 2" and smaller shall be supported with adjustable band hangers. All piping 2½" and larger shall be supported by adjustable clevis hangers. Vertical piping shall be supported by extension type split ring hangers along the wall, and riser clamps where passing through floors. Hangers and clamps for uncovered (un-insulated) copper and brass piping shall be factory applied plastic coated steel or copper hangers. Hanger rods shall have machine threads.
- F. All hangers on insulated lines shall be sized to fit the outside diameter of the pipe insulation. Provide pipe covering protection saddles at all hangers on insulated lines of sheet metal 18 gauge and twelve inches (12"), minimum length, and shall cover 180 degrees of arc (lower quadrants) on the covering at all hangers on insulated piping systems.

- G. Unless noted otherwise, all hangers, rods, supports, channels, and accessories shall be galvanized.
- H. All piping installed under this Section of the Specifications shall be independently supported from the building structure and not from the ceiling, walls, piping, ductwork, or conduit of other Trades. All supplementary steel, including factory-fabricated channels required to meet the Requirements specified herein, shall be furnished and installed by this Contractor.

2.06 PIPE SLEEVE

- A. All pipe sleeves shall be furnished and set by this Contractor. Their location and setting shall be carefully coordinated with the Requirements or limitations of the structural member they are passing through. Any conflict arising shall be solved by utilizing the best Trade practices.
- B. Sleeves and plates shall be black steel, Schedule 40, in accordance with ASTM A53.
- C. Sleeves shall be provided at all locations where pipes pass through concrete or masonry, and shall be sized so as to provide for piping covering and for lateral expansion.
- D. The ends shall be flush with the surfaces, except in floors, where it is possible for water to accumulate, such as toilets, janitor's closets, etc., in which case they shall terminate one inch (1") above the finished floor.
- E. Space between all pipes and sleeves shall be packed with graphite packing and Fire-Rated sealant.
- F. Space between pipes and sleeves penetrating exterior walls shall be sealed with link-seal modular elastomer seals as manufactured by GPT or approved equal.
- G. Sleeves shall have an internal diameter one inch (1") larger than the outside diameter of the pipe passing through the sleeve.

2.07 INSULATION

- A. All new pipe and fittings shall be insulated with Owens/Corning Fiberglas SSL-II-ASJ molded glass fiber insulation, or approved equal. Glass fiber insulation shall have a minimum density of 3¼ pounds per cubic foot with a thermal conductivity ("K" value) ranging from 0.21 to 0.28 at 100°F mean temperature. Insulation shall have a flame spread rating of 25 or less, a smoke developed rating of 50 or less, and a factory applied all service vapor barrier jacket. Insulation shall be compliant with the IECC 2015.
- B. The thickness of insulation to be applied to piping shall be as follows:
- | | | | |
|----|-------------------------|-----------------|-----|
| 1. | Cold Water: | All pipe sizes | ½" |
| 2. | Hot Water: | 1¼" and smaller | 1" |
| | | 1½" and larger | 1½" |
| 3. | Recirculated Hot Water: | 1¼" and smaller | 1" |
| | | 1½" and larger | 1½" |
- C. Insulate all fittings, flanges, valves, etc., for the services requiring insulation, same as specified for their respective piping, with white PVC fitting covers as manufactured by Zeston or approved equal, installed in accordance with the manufacturer's instructions.

D. All longitudinal joints and joints between adjacent sections of insulation shall be butt tightly together, lapping joints with butt strip seals and vapor barrier cement.

F. Plain ends shall be sealed with vapor barrier cement.

2.08 DIRECT-VENT GAS-FIRED WATER HEATER (**ALTERNATE #1**)

A. The water heater shall be the natural gas-fired direct-vent type equal to Bradford White model RG2PDV50S6N with an 50-gallon storage capacity, 40,000 BTU/Hour gas input, and an 86-gallon first hour delivery at a 90°F rise.

B. The tank shall be porcelainized glass lined, insulated with rigid polyurethane insulation, and shall be protected against electrolytic corrosion by a magnesium anode rod. The tank shall have a six-year limited warranty.

C. The water heater shall be equipped with an electronic ignition system, factory installed dielectric fittings, temperature/pressure relief valve, drain valve, induced draft blower for direct venting, and all required safety and operating controls. Accessories shall include all required exhaust vent and combustion air piping, fittings, and condensate neutralizer with pump.

D. The water heater shall be furnished with a six-year limited warranty.

2.09 ELECTRIC WATER HEATER

A. The water heater shall be a residential grade electric water heater equal to Bradford-White model RE350S6, with a 50-gallon storage capacity, and a minimum recovery rate of 21 gallons per hour at a 90°F rise.

B. The tank shall be porcelainized glass lined, insulated with rigid polyurethane insulation, and shall be protected against electrolytic corrosion by a magnesium anode rod. The tank shall have a six-year limited warranty.

C. The water heaters shall be equipped with factory installed automatic temperature control, temperature limiting control, temperature and pressure relief valve, and 4500 watt upper and lower 240-volt heating elements.

D. The water heater shall be furnished with a six-year limited warranty.

2.10 MASTER MIXING VALVE

A. Furnish and install, where shown on the drawings, a factory-assembled mixing valve equal to model 7-1020 as manufactured by Symmons, Lawler, Powers, or approved equal.

B. The mixing valve shall be capable of maintaining accurate water supply temperature during both peak and low-flow periods. Required minimum flow rate/draw off through the valve shall be 0.5 GPM. The valve assembly shall be rated for a maximum demand of 6 GPM at a pressure drop through the valve assembly of 20 PSI.

C. The mixing valve shall be capable of maintaining outlet temperature by automatically compensating for supply line temperature and/or pressure changes, and shall fail safe on hot or cold supply failure.

D. The valve body shall be brass, with brass, bronze, and stainless steel internal parts, and shall have threaded inlet connections with inlet check stops. The valve shall be rated for a maximum working pressure of 125 psi and 180°F.

- E. The mixing valve shall be furnished with inlet strainers, inlet check valves, and unions and ball valves installed on all connections to the device for isolation from the hot water system. Provide bypass piping with ball valves on the hot water supply in order to maintain hot water supply to the building while performing maintenance and/or repairs on the mixing valve.
- F. The initial setting, adjustment and balancing of the valve shall be performed by the manufacturer's representative in the presence of the Owner's personnel. The manufacturer's representative shall review and approve the piping installation prior to setting the valve. The manufacturer's representative shall also provide the required training in accordance with Section 1.18(A).
- E. The valve assembly shall be furnished with outlet piping incorporating a shut off ball valve and dial thermometer.

2.11 PIPING SYSTEMS IDENTIFICATION

- A. All new piping and existing piping located in the Work area shall be identified as to contents and direction of flow in intervals not exceeding ten (10) feet, at each change in direction, and on both sides of penetrations through walls, floors, and/or ceilings.
- B. All systems identification materials shall meet ANSI standard A13.1-1996 and be as manufactured by Seton Name Plate Corporation or approved equal.
- C. Valve tags shall be circular 19 gauge brass, 1½" in diameter, with black filled text Seton No. M4506 with No. 16197 brass hooks, No. 16182 bass jack chain, or No. 6 nickel-plated bead chain. Letter abbreviations shall be 1¼" high above ½" high numbers. Provide three (3) laminated valve tag charts indicating valve number, valve location, pipe contents, and equipment or area served.
- D. Pipe markers shall be "Setmark" type pre-molded acrylic plastic, snap on markers either 8" or 12" long with overlap, as manufactured by Seton or approved equal. The background, field and legend colors and letter sizes shall be per ANSI A13.1 – 1996 standards.
- E. All equipment furnished under this contract shall be identified by approved nameplates provided by this Subcontractor.
 - 1. The nameplates shall be aluminum, minimum 2-1/2" x 3/4" in size, with a black background with etched or engraved natural aluminum lettering. The nameplates shall bear notations corresponding to the same unit notations indicated on the design drawings, or as requested by the Owner in lieu thereof.
 - 2. All nameplates shall be mounted in a conspicuous location on the exterior of the equipment.

2.12 THERMOMETERS

- A. Thermometers shall be as manufactured by Mueller, Taylor, Foxboro, or approved equal.
- B. All thermometers shall have a 9" scale, black scale divisions on white face, perma-colored liquid, union hub, separable brass well, and adjustable base.
- C. Thermometers shall have a temperature range of 30°F to 180°F, and shall have 2°F scale divisions.
- D. Thermometers shall be installed on the inlet and outlet of each piece of water heating equipment and mixing valves.

- E. All thermometers shall be installed so as to be easily read from the floor.

PART 3 - EXECUTION

3.01 OPERATION AND START-UP

- A. Furnish all labor, equipment, materials, and test necessary to place all equipment and Systems into operation, and obtain approval of the entire Plumbing System from the local building department.
- B. Materials, fixtures and fittings shall be properly protected and all pipe openings shall be temporarily closed so as to prevent obstructions and damage.
- C. Prior to final inspection, clean all fixtures and flush all piping and equipment and then place all equipment and fixtures into working order to demonstrate the fitness of the installation.

3.02 CLEANING AND FLUSHING

- A. The potable water system shall be flushed and disinfected as per 248 CMR, 10.14 (13).
- B. This contractor shall obtain the services of an independent testing agency to test the potable water system after disinfection in accordance with the EPA's (Environmental Protection Agency) Primary Drinking Water Standards for Human Consumption. Test results shall be submitted prior to his request for a final inspection.
- C. The disinfection and testing shall be repeated, at no cost to the Owner, until no defects are discovered.

3.03 COORDINATION

- A. The structure and its appurtenances, clearances and the related services, such as plumbing, heating, ventilation, and electric service, have been planned to be adequate and suitable for the installation of equipment specified under this Section. The Owner will not assume any increase in cost caused by differing Requirements peculiar to a particular make or type of equipment, and any such incidental cost shall be borne by this Contractor.
- B. This Contractor shall be responsible for Work and equipment furnished and installed by him or his Subcontractor(s) until the completion and final acceptance of this Contract, and he shall replace any Work that may be damaged, lost, or stolen, without additional cost to the Owner.
- C. Cutting and Patching - It shall be the duty of this Contractor to consult with and give to the General Contractor, the exact location and size of all openings and full information as to cutting and patching necessary for the same.
- D. In the event this Contractor fails to provide sleeves, inserts, and templates or fails to notify other Contractors well in advance of his Requirement, he shall be responsible for paying for all cutting and patching made necessary by his failure to do so.
- E. The location and method of attaching supports for plumbing equipment to the building structure shall be coordinated with the Architect and General Contractor prior to the installation of any equipment. This Contractor shall take necessary precautions to insure the building structure and components are not overstressed by the support of plumbing equipment.

- F. In the event there is a conflict or inadequate space for the proper installation of plumbing Systems, this Contractor shall prepare a scaled ($\frac{1}{4}'' = 1'-0''$ min.) composite sketch, showing the building structure and all equipment and items affecting the installation, to clearly identify the areas of conflict. This Contractor shall submit four (4) copies of the sketch, along with a written explanation of the problem and his proposed solution, to the Engineer for his review and determination on what action to take to resolve the conflict.
- G. It shall be the duty of this Contractor to furnish full information to all Trades relative to the Work they are to do in connection with Work under this Section. This includes data for wiring, including wiring diagrams, equipment foundations, pipe connections, etc., furnished under other Sections.

3.04 AS-BUILT DRAWINGS

- A. The Contractor shall reserve one set of Drawings for record purposes. From this set, the Contractor shall detach and furnish, at no charge to the Subcontractors, the drawings of their portion of the Work for the same purpose.
- B. The Contractor and the above Subcontractors shall keep their marked up As Built set on the site at all times and note on it in colored ink or pencil, neatly and accurately, at the end of each working day, the exact location of their work as actually installed.
1. The location of all underground utilities and appurtenances, shall be referenced to permanent surface features, both horizontally and vertically at ten (10) foot intervals and at all changes of direction.
 2. The location of all internal utilities, equipment, and appurtenances, including but not limited to piping, valves, cleanouts, strainers, traps, and maintenance devices.
 - a. shall be shown by offsets to structure and drawing grid lines.
 - b. The tolerance for the actual location of these items on the marked up As Built Drawings shall be plus or minus two (2) inches.
- C. Use colored pencils for the following:
1. Red indicates deleted items.
 2. Green reflects changes, additions, or new equipment.
 3. Blue indicates specific info or details are provided.
- D. Explain changes if necessary and use clear lettering. Notes and corrections are recommended. Use the same legend and abbreviations as the original drawings.
- E. Add contractors name, date and clearly identify drawings as "red-line drawings for as-built preparation purposes only.
- F. If no changes are needed to a specific drawing, state so and mark them as, as-built.
- G. Availability of As-Built Drawings shall be a prerequisite to scheduling an Engineer's inspection of this Work and said Drawings and Original Contract Documents will be used in checking completion of the Work.
- H. Non-availability of As-Built Drawings or inaccuracies therein may be grounds for cancellation or postponement of any scheduled Engineer's inspection of the Work until such time as the

availability or discrepancy has been corrected, and the Contractor shall compensate the Engineer directly for their effort in association with the cancelled or postponed inspection.

END OF SECTION

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SECTION 23.00.00

HEATING AND VENTILATING

PART 1 - GENERAL

1.01 REFERENCES

- A. The Conditions of the Contract and Division 1 form a part of this Specification and applicable parts thereof shall be included as part of the work of this Section.
- B. Refer to all drawings and other Sections of these Specifications to determine the type and extent of work therein affecting the work of this Section, whether or not such work is specifically mentioned herein.

1.02 SCOPE OF WORK

- A. The work described herein shall be interpreted as work to be done by the H&V Contractor. The H&V Contractor shall be the General Contractor for this project.
- B. The work covered by this Section of the Specifications includes the furnishing of all labor and materials and in performing all operations in connection with the installation of the H&V work.
- C. The work includes, but is not limited to, the following:
 - 1. Gas-fired Furnace.
 - 2. Furnace Venting, Cleaning & Inspecting Chimney (by a Plumbing Filled Sub-bidder).
 - 3. Gas Piping (by a Plumbing Filled Sub-bidder).
 - 4. **(ALTERNATE #1)** DX Split System (Indoor Wall Mounted Units and Outdoor Condensing Unit)
 - 5. **(ALTERNATE #2)** DX Split System (Indoor Air Handling Unit and Outdoor Condensing Unit)
 - 6. Sheet Metal Ductwork.
 - 7. Insulation.
 - 8. Condensate Drain Piping and Pumps.
 - 9. Automatic Temperature Controls.
 - 10. Testing, Adjusting and Balancing (Coordination and Access).
 - 11. O&M Manuals.
 - 12. Operating Instructions.
 - 13. Record Drawings.
 - 14. Demolition as shown on the drawings.
 - 15. Coring, Cutting and Patching under 4-1/2".
 - 16. Firestopping of fire-rated assembly through penetrations, including that required for Plumbing filed sub-bidder.
 - 17. Electrical work (by a licensed Electrician).

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following work is not included under this Section and will be performed under the Sections indicated:
 - 1. By the Plumbing Contractor:
 - a. Indirect-fired DWHs.
 - b. New Domestic Hot, Cold, and Hot Water Return Water Piping and Mixing Valve.
 - c. Gas Piping.
 - d. Combustion Air Intake and Flue Exhaust for Boilers.

- e. Refer to Section 22.00.00 Plumbing for more information.
- 2. By the Electrical Contractor:
 - a. Refer to Section 26.00.00 Electrical for more information.

1.04 CODES, ORDINANCES AND PERMITS

A. All material and work provided shall be in accordance with the following codes and standards:

- 1. Massachusetts State Building Code.
- 2. State Department of Public Safety.
- 3. Local codes.
- 4. Standards of the Underwriters Laboratories (UL).
- 5. Occupational Safety and Health Act (OSHA).
- 6. National Fire Protection Association (NFPA).
- 7. Massachusetts and National Electrical Codes.
- 8. International Energy Conservation Code (IECC) 2018.
- 9. International Mechanical Code (IMC) 2015.
- 10. National Fuel Gas Code (2002 Edition).
- 11. International Plumbing Code.

B. Where the contract documents indicate more stringent requirements than the above codes and ordinances, the Contract Documents shall take precedence.

C. The Contractor shall obtain and the Owner shall pay for all necessary permits and inspections.

1.05 CONTRACT DRAWINGS AND SPECIFICATIONS

A. The drawings showing layout of the H&V systems indicate the approximate location of piping, equipment and location of services. They are schematic and are not intended to show the exact routing or all fittings required. The final determination as to the routing shall be governed by structural conditions and other obstructions. No cutting or removal of any wood or concrete members will be allowed, unless approved in writing by the Architect.

B. The right to make any reasonable change in the location of piping, apparatus and equipment up to the time of roughing-in is reserved by the Architect/Engineer without involving any additional expense to the Owner.

C. The specifications supplement the drawings and provide specifics pertaining to the methods and material to be used in the execution of the work.

D. Any discrepancies between the drawings and specifications or within the drawings/specifications shall be brought to the attention of the Architect/Engineer for clarifications.

E. Contractor shall read and understand the Contract Documents and submit the bid in accordance therewith. Contractor shall visit the site and get familiar with the local conditions under which the Work has to be performed. Failure to so examine the Contract Documents and site will not relieve the Contractor from any obligation under the bid as submitted.

1.06 SHOP DRAWING AND MATERIALS SCHEDULE

A. Refer to specification Section 01.33.00 for all shop drawing requirements.

B. The approval of equipment does not relieve the H&V Contractor from the responsibility for shop drawing errors in details, sizes, quantities, wiring diagram arrangements and dimensions which deviate from the specification, contract drawings and/or job conditions as they exist.

- C. Refer to General Requirements for substitution of equipment and submittal of shop drawings. If apparatus or materials are substituted for those specified and such substitution necessitates changes in or additional connections, supports or construction, same shall be provided. The H&V Contractor shall assume cost and entire responsibility thereof. H&V Contractor shall assume cost incurred by other trades due to the substitution.

1.07 RECORD DRAWINGS

- A. Refer to Specification Section 01.78.39 for the Record Drawing requirements for this section.
- B. The marked up As Built Drawings required to be maintained under this section is Drawing **M-1, M-2, M-3, M-4, & M-5**.
- C. Availability of marked up As Built drawings shall be a prerequisite to scheduling final inspection of this contract and said drawings and original contract documents will be used in checking completion of the work.
- D. Non-Availability of marked up As Built drawings or inaccuracies therein may be grounds for cancellation and postponement of any scheduled final inspection by the Architect until the discrepancy has been corrected.

1.08 OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS

- A. Refer to Section 01.77.00 for the Operating and Maintenance Manual requirements for this Contract.
- B. The H&V Contractor shall provide two (2) sets of operating and maintenance instructions of all mechanical and electrical equipment furnished and installed under this section.
- C. The Contractor shall collect the operating instructions, bind them into two complete sets and deliver them to the Architect who will check for completeness and deliver them to the Owner.
- D. Contractor shall include the approved shop drawings in the operation and maintenance manuals.
- E. Delivery of the operating and maintenance manuals shall be a condition precedent to final payment.

1.09 INSTRUCTION OF OWNER'S PERSONNEL

- A. Refer to Section 01.77.00 for the Instruction of Owner's Personnel requirements for this Contract.
- B. The Heating and Ventilating Contractor shall instruct the Owner's personnel, at the site, in the use and maintenance of equipment installed under this section. The training and instructions shall include four (4) hours of general operating and maintenance of all installed equipment instruction and four (4) hours of boiler operation and maintenance instruction by the boiler manufacturer's representative.
- C. Submission to the Architect of a certificate of compliance to this requirement, signed by the Contractor and the Owner's Representative shall be a condition precedent to final payment.

1.10 GUARANTEE AND SERVICE

- A. Notwithstanding any other requirements of this contract, the Heating and Ventilating contractor shall guarantee the performance of the installation and equipment included in this Section for one year from the date of Substantial Completion as defined in Article 9.6 of the General Conditions.

Should any defects in materials or workmanship appear during this period, they shall be corrected or replaced by the Heating and Ventilating contractor to the satisfaction of the Architect, and at no expense to the Owner.

1.11 PERMITS

- A. The contractor's attention is directed to subparagraph 4.16 of the General Conditions. This Contractor shall be responsible for obtaining all permits and inspections required to complete all work described in this section and the Owner shall pay for all permits and inspections.

1.12 STORAGE OF MATERIALS

- A. Store materials prior to their installation where designated by the Owner. Be responsible for all stored equipment and materials and protect all installed equipment and materials from damage.

1.13 INSPECTION AND TESTS

- A. If inspection of materials installed shows defects, such defective work, materials and/or equipment shall be replaced at no cost to the Owner and the inspection and tests repeated.
- B. Make all reasonable tests as required and prove the integrity of all work and leave the entire H&V system installation in correct adjustment and ready to operate.

1.14 ELECTRICAL CHARACTERISTICS

- A. In general, all heating and ventilating equipment shall be of the HP, voltage, and phase as indicated on the drawings.
- B. Control wiring for heating and ventilating systems and power wiring, including provisions for disconnect switches not otherwise furnished as an integral part of the mechanical equipment shall be furnished under this Section.
- C. Fractional horsepower motors wired for single phase operation shall have automatic reset overload protection built into the motor.

1.15 DEFINITION OF TERMS

- A. "Furnish" or "Supply" means to purchase, procure, acquire and deliver.
- B. "Install" means to rig, erect, mount and connect, unless specifically noted otherwise.
- C. "Furnish and Install" means to supply, deliver, rig, erect, mount and connect in readiness for operation, unless specifically noted otherwise.
- D. "Provide" is synonymous with "Furnish and Install".
- E. "Piping" means pipe, tubing, fittings, flanges, unions, valves, strainers, traps, hangers and other accessories related to such piping.
- F. "Concealed" means hidden in chases, furred spaces and walls, above ceilings or enclosed in construction.
- G. "Exposed" means visible or not installed "Concealed" as defined above.

H. "Approved Equal" or "or equal" means any equipment or material which is approved by the Engineer as equal in quality, durability, appearance, strength, design and performance to the equipment or material originally specified.

I. "Underground" means buried exterior to or within the building.

1.16 WORK COORDINATION AND JOB OPERATIONS

A. H&V equipment shall not be installed in congested and possible problem areas without first coordinating the installation of same with the other trades. Relocate H&V equipment should it interfere with the proper installation of equipment to be installed by the other trades.

B. Furnish to the other trades, all information relative to the portion of the H&V installation that will affect them, so that they may plan their work and installations accordingly.

1.17 DEMOLITION

A. The heating Contractor shall demolish, remove and dispose of properly, existing equipment and appurtenances as specified herein and as indicated on the drawings. Demolition shall include but not be limited to the following:

1. Existing Gas Fired combination boiler and water heater and associated accessories.
2. Existing Heating Hot Water Air Handling Unit and associated accessories.

B. The Owner reserves the right to maintain ownership of certain heating, domestic hot water heating system components that are scheduled to be removed. The Contractor shall coordinate this with the Owner.

1.18 REBATES

A. Contractor shall assist the housing authority in obtaining all eligible utility rebates and transferring these rebates to the housing authority.

1.19 CUTTING, CORING AND PATCHING

A. Cutting and patching through existing construction using core drill and measuring larger than 4-1/2 inches in diameter, or 4-1/2 inches by 4-1/2 inches, shall be performed by the General Contractor. This Section's Contractor is responsible for reviewing and coordinating with other sub-contractors.

1. Concrete coring less than 4-1/2 inches: Any new penetration cut through concrete less than 4-1/2 inches in width.
2. Masonry openings less than 4-1/2 inches: Any new penetration cut through masonry less than 4-1/2 inches in width.

PART 2 - PRODUCTS

2.01 PIPE AND FITTINGS

A. PVC Piping: Condensate drain piping shall be Schedule 40 PVC with solvent joints. Provide P-trap for each condensate drain line connection. Provide clean-outs at each change in direction of piping. Use tees and a 45-degree fitting for a branch line joining a main. Clean-outs shall be made with threaded plug tees. Pitch piping down in direction of flow.

B. Refrigerant Piping: **(ALTERNATE #1 and #2)**

1. Rigid Copper Refrigerant Pipe: ASTM B819, type #ACR hard drawn or annealed with ASME B16.22 wrought copper fittings. Material shall be Type ACR hard drawn copper tubing with silver solder wrought copper fittings. Tubing shall be specially cleaned and capped for use with refrigerants. Piping shall be sized as recommended by the manufacturer.
2. Pre-insulated line sets: At the discretion of the HVAC subcontractor, manufacturer approved pre-insulated line sets may be used. Lines shall be hung to avoid sagging. Do not allow lines to lay on ceiling system. Pre-Insulated line sets shall be sized and have an insulation thickness as recommended by the equipment manufacturer.

2.02 SLEEVES, ESCUTCHEONS, AND FIRE STOPPING

- A. All piping passing through masonry walls, slabs, floor partitions or other building construction shall be provided with pipe sleeves at least two pipe sizes larger than the pipe passing through them or the insulation jacket on covered pipes. Sleeves shall be flush on either side of masonry walls or partitions. All sleeves in floor slabs shall extend 1/2" above finished floors. All sleeves shall be standard weight steel pipe. Insulation shall pass continuously through sleeves.
- B. Where exposed pipes pass through floors, finished walls or finished ceilings, they shall be fitted with neat, heavy spun or stamped steel, chrome plated escutcheons, firmly secured to the pipes. In unfinished areas, escutcheons shall be cast iron, split and painted to match the adjacent surfaces. Escutcheons shall be of sufficient outside diameter to amply cover the sleeved openings for the pipe.
- C. Where pipes penetrate fire rated assemblies, walls or floors, openings shall be firestopped.

2.03 SHEET METAL DUCTWORK

- A. Furnish and install, in an approved manner, all sheet metal work that is indicated on the drawings or that is specified or required for the various systems of heating, ventilation, air conditioning, return air and exhaust air.
- B. All sheet metal work shall be manufactured and erected in a first class and workmanlike manner, in accordance with the Duct Manual of the Sheet Metal and Air Conditioning Contractors National Association, Inc. and shall be approved by the Architect. All ducts, unless otherwise approved, shall be true to the dimensions indicated on the plans and shall be straight and smooth on the inside with neatly finished joints. The ducts shall be securely anchored to the building construction in an approved manner and shall be so installed as to be completely free from vibration under all conditions of operation. All ducts shall be supported in accordance with requirements of Plate Numbers 18, 19 and 20 of the SMACNA Duct Manual.
- C. All slip joints for low velocity rectangular ducts shall be made in direction of air flow and, unless otherwise indicated on the plans, all elbows shall have long turns with the inside radius no less than the plan dimension of the duct. Where short radius elbows or square corner elbows are used, they shall be fitted with turning vanes. All notches for connecting sections of duct and all governing seam notches shall not be cut any deeper than necessary to insure tight corners. Any notched corners not meeting with approval shall be removed and reinstalled or sealed with solder.
- D. Install and seal ducts in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible. The ductwork shall be sealed to provide a SMACNA Seal Class A installation. All transverse seams, longitudinal seams, joints, and duct penetrations shall be sealed with water-based vinyl copolymer mastic formulated to withstand temperature from -20°F to +150°F. Sealant shall have a temperature UL Classification with a flame spread of 25 or less and smoke developed of 50 when tested in compliance with ASTM-E-84-87. Duct sealants shall be in compliance with LEED VOC off gassing requirements 250 g/l or less permitted.

- E. Unless otherwise specified, all rectangular ducts shall be of the best bloom galvanized steel of the U.S. Standard gauges specified below and shall be stiffened by cross breaking and by use of galvanized rolled steel angles as specified below:

Rectangular Sizes	Gauge No.	Galvanized Iron Angle Stiffeners	Center Spacing
Up to 14"	26	Standing Seams	
15" to 30"	24	Standing Seams	Not Greater Than 33"

- F. All rectangular sheet metal ductwork, unless otherwise specified, shall be constructed with longitudinal Pittsburgh Lock seams thoroughly flattened down to make a tight joint. Transverse joints shall be made up with slip joints and standing lock seams. Branches to and from the main trunk shall be made at an angle but shall, in no case, exceed 45° to the line of air flow.
- I. Duct Sizes: All duct sizes indicated on the drawings are inside dimensions of either the bare metal or the sound insulation where specified. Where sound insulation is specified for installation, the sheet metal ducts shall be increased in size to provide the free area inside the sound insulation called for on the drawings.
- J. Flexible Duct:
1. Furnish and install flexible ducts from sheetmetal ducts to supply outlets as indicated on the drawings.
 2. Flexible ducts shall be fabri-flex coated fiberglass fabric ducts or approved equal. Flexible supply ducts shall be Fabriflex Type IV insulated ducts or approved equal with 1", 3/4 Lb. density insulation in a seamless polyethylene covered jacket.
 3. Flexible ducts shall be installed in strict accordance with the manufacturer's recommendations. Lengths of flexible ducts shall not exceed 5 feet.
- P. Existing ductwork to remain: Existing ductwork to remain shall be inspected, cleaned, and resealed.
1. Clean existing, to remain, duct systems with high power vacuum machines. Protect equipment that may be harmed by excessive dirt with filters or bypass during cleaning. Provide adequate access into ductwork to completely clean all existing ductwork in system. The company that performs the duct cleaning shall be a current standing member of the National Air Duct Cleaners Association (NADCA) with an Air System Cleaning Specialist (ASCS) certified staff member.
 2. Existing ductwork shall be resealed to provide a SMACNA Seal Class A installation for all longitudinal seams, all transverse seams and all duct penetrations.

2.04 INSULATION

- A. Provide pipe covering and duct insulation of the type hereinafter specified on the following: hot water piping, cold water make-up piping, refrigerant piping and sheet metal ducts. All sealers, solvents, tapes, adhesives and mastics used in conjunction with this section of the specifications shall possess the maximum safety quantities available and Standards #90A and #90B. Insulation shall be fiberglass except as specified hereinafter having a minimum density of four pounds per cubic foot. Insulation shall be as manufactured by Armstrong, CertainTeed, Johns-Manville, Knauf, Owens/Corning, or equal and installed in accordance with the manufacturer's recommendations.
- B. Piping: All new piping and fittings throughout the building, as shown on the drawings, shall be insulated with Owens/Corning Fiberglass, or equal, 25 ASJ glass fiber insulation in molded sections. Glass fiber insulation shall have a minimum density of 3-1/4 pounds per cubic foot with

a thermal conductivity ("K" value) of 0.23 at 75°F mean temperature. All piping shall have a factory applied all service vapor barrier jacket. The end joints of the insulation shall be sealed with factory furnished end joint sealing tape. Longitudinal seams shall be sealed with Benjamin Foster 85-75 adhesive. The thickness of insulation to be applied to piping shall be as follows:

1. All refrigerant suction lines shall be insulated with 1" wall thickness flexible elastomeric closed cell pipe insulation. All insulation exposed to the weather shall be furnished with two coats of Armstrong Armaflex finish or approved equal. Contractor shall provide on both the suction and liquid lines as recommended by the manufacturer. Flexible elastomeric cellular insulation shall be manufactured by Armstrong Armaflex, Aerocel3: K-Flex, or approved equal.
 2. The end joints of insulation shall be tightly butted and covered with factory furnished end joint sealing tapes. The jacket overlap shall be sealed with an approved sealer which shall not mar the jacket finish. Staples shall not be used for fastening insulation.
 3. All fittings, valves and flanges shall be insulated with the same thickness of fiberglass as on the piping, with mitered segments of pre-molded F/G fittings wired in place after which a one mil aluminum foil vapor barrier shall be wrapped tightly over the insulation with all laps sealed with the manufacturer's vapor seal mastic. Wet coats of vapor seal mastic with imbedded glass fabric shall be applied to fittings, per the manufacturer's recommendations. Staples or tacks shall not be used.
- C. Ductwork: Provide duct insulation as specified and shown on the drawings. All insulation shall be Installed per manufacturer's recommendations.
1. All air conditioning supply air ducts and return air ducts above ceilings and outdoor air ducts shall be insulated with 1-1/2" thick fiberglass insulation wrap with 0.0025" aluminum foil facing that has been tested in accordance with ASTM E-84, having a flame spread rating of 25 maximum and smoke developed rating of 50 maximum.
 2. All plenums behind intake and exhaust louvers shall be insulated with 1" thick 703 Series Fiberglass board insulation, with 0.0025-inch aluminum foil facing that has been tested in accordance with ASTM E-84, having a flame spread rating of 25 maximum and smoke developed rating of 50 maximum. Install per manufacturer's recommendations.

2.05 GAS FIRED FURNACE

- A. Furnish and install high efficiency, sealed combustion factory assembled, vertical gas furnaces. Unit shall be complete with condensing gas furnace, fan, motor and wall mounted thermostat. Units shall be YORK, Model TM9E060 or equal as manufactured by RUUD or approved equal as manufactured by Trane or American Standard.
- B. Unit cabinet shall be constructed of milled galvanized steel. Casing panels shall be removable for easy access to the unit.
- C. Unit shall be equipped with a corrosion-resistant steel heat exchanger. Heat exchanger shall be of the serpentine type.
- D. The fan motor shall be equipped with integral, automatic reset thermal overload motor protection.
- E. Units shall be of the capacities scheduled.
- F. Unit shall be mounted on new 4" high concrete blocks. Contractor shall extend the existing housekeeping pad as required to accommodate the new furnace.
- G. The combustion air intake and flue exhaust vents for the furnaces shall terminate sidewall above grade and shall be installed per manufacturer's recommendations.

- H. Unit shall be furnished with a condensate drain neutralizer and condensate pump equal to Little Giant VCMA Series. Pump shall be capable of pumping 48 GPH at 10' of head AT 115V/1Ph/60Hz.

2.06 DIFFUSERS, REGISTERS, AND GRILLES (ALTERNATE #2)

- A. Provide all diffusers, registers and grilles as scheduled on the drawings. The units shall be of the size, type and direction of flow noted on the drawings. Test and rate air outlet and inlet performance in accordance with ADC Equipment Test Code 1062 and ASHRAE 70. All registers and diffusers shall be furnished with individually adjustable volume control dampers. Diffusers, registers and grilles shall be as manufactured by Tuttle & Bailey, Krueger, Metal-Aire, Nailor, Price, Titus or approved equal and shall be complete with the finishes and accessories specified on drawings.
- B. All diffusers, registers and grilles shall have color selected by Engineer. Contractor shall coordinate the color with the Engineer prior to order. The units shall be factory painted the Engineer's selected color.
- C. Ceiling diffusers shall be of the restricted multi-orifice jet induction and air mixing type consisting of louver sections with built-in diffusing vanes. The vanes shall be arranged to discharge air from adjacent louvers to insure rapid mixing of primary and room air. Diffusing vanes shall be welded and mechanically fastened to the adjacent louver sections to make a rigid unit. The vanes shall extend to the discharge edges of the louvers. Where louver sections join the core frame, the louver ends shall be welded to the core frame. The leaving edge of each louver shall be hemmed and the louver end shall be rounded and hemmed before welding to the core frames. Diffuser shall be provided with a connection. The diffusers shall extend no less than 1" to prevent leakage into the ceiling space. Diffusers shall be of steel construction with extended pan to accommodate 2' x 2' lay-in ceiling or gyp-board ceiling configuration as scheduled. Diffusers shall have baked enamel finish.
- D. Return registers shall be of steel construction with opposed blade dampers as scheduled on drawings (no damper for transfer grilles), 35-degree horizontal fixed bars maintaining an effective area capacity of greater than 75% and baked enamel finish.

2.07 DX SPLIT SYSTEM (WALL MOUNTED INDOOR UNITS & OUTDOOR CONDENSING UNIT) (ALTERNATE #1)

- A. Furnish and install a ductless split heat pump air conditioning system as indicated on the drawing. The system shall be cooling and heating as manufactured by Mitsubishi or approved equal by Daikin or Fujitsu.
- B. Quality Assurance:
1. The units shall be listed by Electrical Laboratories (ETL) and bear the ETL label.
 2. All wiring shall be in accordance with the National Electrical Code (N.E.C.)
 3. The units shall be rated in accordance with ARI Standard 210 and bear the ARI label.
 4. The units shall be manufactured in a facility registered to ISO 9001 and ISO 14001 which is a set of standards applying to environmental protection set by the International Standard Organization (ISO).
- C. A full charge of R-410 for 100 feet of refrigerant tubing shall be provided in the condensing unit.
- D. A dry air holding charge shall be provided in the evaporator.
- E. The units shall have a manufacturer's warranty for a period of one (1) year from date of installation. The compressor shall have a warranty of six (6) years from date of installation. If,

during this period, any part should fail to function properly due to defects in workmanship or material, it shall be replaced or repaired at the discretion of the manufacturer. This warranty does not include labor.

- F. The outdoor unit shall be capable of operating at 0° ambient temperature without additional low ambient controls (Optional wind baffle may be required).
- G. Provide a wired wall mounted thermostat, Mitsubishi, PAC-YT53CRAU T-Stat to control the indoor units. Provide Mitsubishi adaptors, for each wall mount indoor unit to interface the wired thermostat with the indoor unit.
- H. Each split system will be furnished with and shall be installed with a condensate pump equal to Blue Diamond model X87-721.
- I. The split system will be provided with a new branch box – model PAC-MKA32BC or approved equal. The branch box will be provided with new electrical and control wiring as required for a complete installation. The branch box will be provided with a new branch box enclosure and port adapters as required for connection to new refrigerant piping.
- J. All new refrigerant tubing and piping shall be sized in accordance with the manufacturer's installation requirements. All accessories and fittings shall be furnished and installed as required and shall be pressure tested before being filled.

2.08 DX SPLIT SYSTEM (INDOOR AIR HANDLING UNIT & OUTDOOR CONDENSING UNIT)
(ALTERNATE #2)

- A. Furnish and install a ducted indoor units and outdoor air cooled condensing unit split heat pump air conditioning system as indicated on the drawing. The system shall be cooling and heating as manufactured by Mitsubishi or approved equal by Daikin or Fujitsu.
- B. Quality Assurance:
 - 1. The units shall be listed by Electrical Laboratories (ETL) and bear the ETL label.
 - 2. All wiring shall be in accordance with the National Electrical Code (N.E.C.)
 - 3. The units shall be rated in accordance with ARI Standard 210 and bear the ARI label.
 - 4. The units shall be manufactured in a facility registered to ISO 9001 and ISO 14001 which is a set of standards applying to environmental protection set by the International Standard Organization (ISO).
- C. A full charge of R-410 for 100 feet of refrigerant tubing shall be provided in the condensing unit.
- D. A dry air holding charge shall be provided in the evaporator.
- E. The units shall have a manufacturer's warranty for a period of one (1) year from date of installation. The compressor shall have a warranty of six (6) years from date of installation. If, during this period, any part should fail to function properly due to defects in workmanship or material, it shall be replaced or repaired at the discretion of the manufacturer. This warranty does not include labor.
- F. The outdoor unit shall be capable of operating at 0° ambient temperature without additional low ambient controls (Optional wind baffle may be required).
- G. Provide a wired wall mounted thermostat, Mitsubishi, PAC-YT53CRAU T-Stat to control the indoor units. Provide Mitsubishi adaptors, for each wall mount indoor unit to interface the wired thermostat with the indoor unit.

- H. Each split system will be furnished with and shall be installed with a condensate pump equal to little Giant VCMA Series. Pump shall be capable of pumping 25 GPH at 10' of head.
- I. The split system will be provided with a new branch box – model PAC-MKA32BC or approved equal. The branch box will be provided with new electrical and control wiring as required for a complete installation. The branch box will be provided with a new branch box enclosure and port adapters as required for connection to new refrigerant piping.
- J. All new refrigerant tubing and piping shall be sized in accordance with the manufacturer's installation requirements. All accessories and fittings shall be furnished and installed as required and shall be pressure tested before being filled.

2.09 AUTOMATIC TEMPERATURE CONTROL SYSTEM

A. General:

- 1. Furnish and install, as hereinafter specified, additional electronic temperature control components not provided by the boiler manufacturer as manufactured by Grundfos or approved equal.
- 2. The control system shall be installed by competent control mechanics and electricians regularly employed in the field of Automatic Temperature Controls. All control equipment shall be the product of one manufacturer.

- B. Scope: The control system shall consist of all controllers, relays and transformers, thermostats (existing wall mounted), electric wiring and other accessory equipment to fill the intent of the specification and provide for a complete and operable system. All control equipment shall be fully proportioning, except as noted otherwise.

C. Electric Wiring:

- 1. All electric wiring and wiring connections, either line voltage or low voltage, required for the installation of the temperature control system, as herein specified, shall be provided by the temperature control contractor unless specifically shown on the electrical drawings or called for in the electrical specifications. 120-volt power shall be provided by the Electrical Contractor
- 2. All wiring shall comply with the requirements of the state and National Electric Code.

D. Submittal Brochure: The following shall be submitted for approval:

- 1. Control drawings with detailed wiring diagrams, including bill of material and description of operation for all systems.
- 2. Data sheets for all control system components.

E. Instruction and Adjustment: Upon completion of the project, the control contractor shall:

- 1. Completely adjust, ready for use, all new thermostats and controllers, relays, etc., provided under this section.
- 2. A competent technician shall be provided for instruction purposes and Contractor shall provide two hours of instruction to Owner's designated representatives on operation of the control system.

- F. Guarantee: The control system designated on drawings and plans and herein specified shall be guaranteed to be free from original defects in both material and workmanship for a period of one (1) year or normal use and service, excepting damages from other causes. This guarantee shall become effective starting the date the owner begins to receive beneficial use of the system.

G. Equipment

1. A new thermostat shall be provided and shall be interlocked with the associated new gas fired furnace serving each unit. The thermostat shall be manual type, wall mounted Model #TH6220D1028 as manufactured by Honeywell or approved equal. The thermostats shall have a large/legible digital display. At the new thermostat locations, Contractor shall patch the wall and paint to match existing. Contractor shall re-use existing thermostat wire as necessary. Contractor shall provide new thermostat wiring if applicable. Contractor shall install the new thermostat in the location of the existing thermostat.
2. **(ALTERNATE #1)** A new thermostat shall be provided and shall be interlocked with the new DX Indoor wall mounted indoor unit serving each room. The thermostat shall be manual type, wall mounted Model #PAC-YT53CRAU as manufactured by Mitsubishi or approved equal. The thermostats shall have a large/legible digital display. At the new thermostat locations, Contractor shall patch the wall and paint to match existing. Contractor shall re-use existing thermostat wire as necessary. Contractor shall provide new thermostat wiring if applicable. Contractor shall install the new thermostat in the location of the existing thermostat if applicable.
3. **(ALTERNATE #2)** A new thermostat shall be provided and shall be interlocked with the new DX Indoor Air Handling Unit serving each unit. The thermostat shall be manual type, wall mounted Model #PAC-YT53CRAU as manufactured by Mitsubishi or approved equal. The thermostats shall have a large/legible digital display. At the new thermostat locations, Contractor shall patch the wall and paint to match existing. Contractor shall re-use existing thermostat wire as necessary. Contractor shall provide new thermostat wiring if applicable. Contractor shall install the new thermostat in the location of the existing thermostat.

H. Sequence of Operation

1. Gas Fired Furnace: The new gas fired furnace shall be controlled by the new wall mounted thermostats in each apartment. The furnace shall fire and modulate to maintain the space setpoint temperature.
2. **(ALTERNATE #1)** DX Wall Mounted Indoor Units: The new DX wall mounted indoor units shall activate the refrigeration cycle based on the space setpoint temperature and modulate the outdoor and indoor units as necessary to maintain the space setpoint.
3. **(ALTERNATE #2)** DX Indoor Air Handling Unit – 1 & 2: The new DX indoor air handling units shall activate the refrigeration cycle based on the space setpoint temperature and modulate the outdoor and indoor units as necessary to maintain the space setpoint.

PART 3 - EXECUTION

3.01 MATERIALS AND WORKMANSHIP

- A. All specified materials and equipment shall be furnished new and free of defects.
- B. Store all equipment and materials in a clean, dry place to preserve initial quality.
- C. Protect installed materials and equipment against damage and corrosion. All equipment shall be left in a first-class condition. The Architect shall determine the adequacy of equipment condition and appearance and it shall be the responsibility of this Subcontractor to rectify any deficiencies. This shall include, but is not limited to furnishing and applying paint in accordance with the manufacturer's recommendation.
- D. All work shall be installed in a first-class manner consistent with the best current trade practices. All devices, materials and equipment shall be securely installed plumb and/or level.

3.02 PROTECTION AND CLEANUP

A. Protection:

1. Be responsible for the maintenance and protection of all material and equipment furnished during all phases of construction from loss, damage or deterioration until final acceptance by the Owner.
2. All materials and equipment on the job site shall be suitably stored and protected from the weather.
3. During the progress of the work all pipes, ducts and equipment openings shall be temporarily closed so as to prevent obstruction and damage.

B. Cleanup:

1. After installation, equipment with factory finished surfaces shall be cleaned and damaged spots touched up with the same type paint applied at the factory.
2. Keep the job site free from accumulation of waste material and rubbish, construction equipment and surplus materials from the site and leave the premises in a clean condition.

3.03 SYSTEM START-UP AND OPERATION

- A. After completion of the installation and before acceptance by the Owner, this Contractor shall completely flush the new piping system to ensure it is free of foreign material and shall start-up, operate and thoroughly check the entire boilers and piping systems to assure complete adherence to the design intent.
- B. It is intended that the start-up/operational endeavor shall conclusively establish that all systems are functioning properly with respect to rotation of equipment, wiring interlocks, control interlocks and sequential control. The Contractor shall have the boiler start up performed by the boiler manufacturer and submit a start-up report to the engineer.
- C. Should any portion of system performance be found to be contrary to the specified intent, same shall be corrected as required, at no cost to the Owner.
- D. After completion of the system check procedure and when the Contractor is firmly convinced that all systems are performing properly and efficiently, he shall submit in writing to the Engineer a certified statement to that effect.

3.04 SAFETY PRECAUTIONS

- A. Furnish, place and maintain proper guards for the prevention of accidents and any other necessary construction required to secure safety of life and property. Conform to all OSHA requirements.

3.05 SUPPLEMENTARY STEEL, CHANNELS AND SUPPORTS

- A. Furnish and install all supplementary steel, channels, vibration isolators and supports required for the proper installation, mounting and support of all equipment. Method of attachment to the building structure shall be in a manner approved by the Architect/Engineer. Type and size of supports shall be determined by the Contractor and shall allow only a minimum amount of deflection, vibration and sound. Contractor shall make sure the equipment is installed in such a way that the associated sound levels are within the manufacturer approved levels. In the event of the equipment providing abnormal sound, Contractor shall correct the installation.
- B. All supplementary steel and channels shall be installed in a neat and workmanlike manner parallel to the walls, floor and ceiling construction. All turns shall be made with 90 degree and 45 degree fittings, as required to suit the construction and installation conditions.

3.06 TESTING AND BALANCING

A. The Owner shall engage a Certified Balancing Contractor to balance and adjust the furnace and air handling units using methods and procedures which have been developed and employed to accomplish this service. The HVAC Contractor shall coordinate with the Balancing Contractor and provide required information, access and clearances.

1. Air System Balancing and Cleaning:

- a. Before the systems are tested and balanced, all ducts and equipment shall be thoroughly cleaned so that no dirt, dust or other foreign matter will be deposited in or carried through systems. All filters shall be replaced after air handling systems have been cleaned.
- b. Each air supply and return system shall be balanced to deliver within 10% of the air quantities specified on the drawings.
- c. Submit to the Architect six copies of the complete air balancing report. Air balancing report shall include for each fan system the fan size, make, model, fan and motor RPM, delivered amperage, CFM, fan static pressures and CFM at each air inlet and outlet.
- d. Final air quantities shall be achieved by adjusting fan outlet dampers and fan RPM. Final damper settings shall be permanently marked after air balance report.

3.07 SYSTEMS IDENTIFICATION

A. The furnace, heat pump indoor unit and outdoor air-cooled condensing unit shall be identified by approved nameplates provided by this Contractor. The pump nameplate shall include apartment number.

1. The nameplates to be aluminum 2-1/2" x 3/4" with a black background with etched or engraved natural aluminum lettering. The nameplates shall bear notations corresponding to the same unit notations indicated on the design drawings.
2. All equipment nameplates shall be conspicuously visible externally.

END OF SECTION

SECTION 26 00 00
Electrical Work

(Filed Sub-Bid)

1.1 DESCRIPTION

- A All of the Contract Documents, including General and Supplementary conditions and Division 0 – Bidding Documents, Contract Forms and Conditions of the Contract and Division 1 – General Requirements, apply to the work in this Section.
- B Carefully examine all the Contract Documents for requirements which affect the work of this Section. The exact scope of this Section cannot be determined without a thorough review of all specifications sections and other Contract Documents.
- C Where referred to, Standard Specifications, Recommendations of Technical Societies, and/or Manufacturer's Associations, plus Codes of Federal, State, and Local Agencies shall include all amendments current as of date of issue of these specifications.

1.2 REQUIREMENTS FOR SUBMITTING FILED SUB-BID

- A. Sub-bids shall be submitted for the Work of this Section in accordance with the provisions of M.G.L. c.149 §§44A-J. The time and place for submission of sub-bids are set forth in the **Advertisement**. The procedures and requirements for submitting sub-bids are set forth in the **Instructions to Bidders**.
- B. Sub-bidders must be DCAMM Certified in the listed trade and shall include a Current DCAMM sub-bidder Certificate of Eligibility and a signed DCAMM Sub-bidder's Update Statement with the bid
- C. Specification requirements for the Filed Sub-bid "Electrical Work" include all of the following listed Specification Sections in their entirety.

SECTION 26 00 00 01 - ELECTRICAL

- D. The Work of this Section is shown on Drawings
E-1
- E. SUB-SUBS

1. Sub-sub bids are required for this Section. Sub-Bidders shall include the appropriate information for the list of sub sub-bid Class of Work noted below in this paragraph. NOT APPLICABLE
2. If the Filed Sub-Bidder customarily performs the above Work with its own workforce, the Sub-Bidder should list its own name and trade and leave the dollar amount blank.
3. If the Filed Sub-Bidder does not customarily perform the Classes of Work with its own workforce, the Sub-Bidder should list the name of the contractor performing the work, the trade and insert a dollar amount.

END OF SECTION

SECTION 26.00.00

ELECTRICAL

PART 1 – GENERAL

1.01 GENERAL

- A. The Conditions of the Contract and other sections of Division 1, General Requirements, apply to work of this Section.

1.02 WORK TO BE PERFORMED

- A. The scope of work under this Section, without limiting the generality thereof, includes the furnishing of all labor, materials, equipment, services and incidentals necessary to complete all of the Work in accordance with the Contract Documents which are intended to describe and provide for a finished piece of Work, and are to be cooperative; what is called for by either shall be complete in every detail, notwithstanding whether or not every item necessarily involved is particularly mentioned.

- B. Electrical Work shall generally consist of, but not be limited to:

1. Obtain all permits and inspections;
2. Disconnect and make safe all mechanical equipment to be removed by the General Contractor;
3. Provide power to all new mechanical equipment, provided by the General Contractor, as shown;
4. Under Alternate No. 1, Replace service entrance conductors and service mast with new as shown;
5. Selective demolition of items as noted or shown;
6. Provide all wire and cable, connectors and connections;
7. Provide all raceways, fittings and supports;
8. Provide all device, pull, outlet and junction boxes;
9. Provide all wiring devices and plates;
10. Provide all safety disconnect switches as shown;
11. Provide all circuit breakers as shown or scheduled;
12. Provide all utility metering as shown or required by the serving utility;
13. Provide all coordination with the serving utilities for power as required;
14. Testing, training, commissioning and demonstration of all systems;
15. Record Drawings;
16. Operation and Maintenance Instruction and Manuals;
17. Warranties.
18. Refer to all other applicable sections of the specifications for alternates which may affect the Work of this section.

- C. This Contractor shall ensure power is restored to each unit at the end of each day. In the event this Contractor starts work in a unit, and is unable to complete the work, this Contractor

shall provide temporary power until such time as the new installation is in operation and tested by this Contractor.

- D. Coordinate fully with the electrical Utility companies for any required work, including but not limited to disconnection and re-connection of services. All backcharges, if any, shall be billed directly to and paid for by the Authority. All permit and inspection fees for the work of this section shall be paid for by the Owner. Request a check(s) from the Owner in writing payable to the appropriate permit issuing agencies, for the amount(s) of all permits required.
- E. Restore to match surrounding surfaces any area disturbed or exposed by the Work of this contract, including work by Utilities.
- F. Perform work and provide material and equipment as shown on Drawings and as specified or indicated in this Section of the Specifications. Completely coordinate work of this Section with work of others and provide a complete and fully functional installation. Drawings and Specifications form complimentary requirements; provide work specified and not shown, and work shown and not specified as though explicitly required by both. Although work is not specifically shown or specified, provide supplementary or miscellaneous items, appurtenances, devices and materials obviously necessary for a sound, secure and complete installation. Remove all debris caused by the Contractors' work.
- G. Wiring shall be routed as required to minimize cutting and patching required. Devices shall be located to comply with code required locations, and to avoid field obstructions, and to comply generally with locations as shown on the drawings. The relocation of devices and related work within 10 feet of location shown on plans shall be included in the contract price.
- H. Drawings are diagrammatic and indicate general arrangement of systems and work included in Contract. It is not intended to specify or to show every offset, fitting or component; however, Contract Documents require components and materials whether or not indicated or specified as necessary to make the installation complete and operational.
- I. As work progresses and for duration of Contract, maintain complete and separate set of prints of Contract Drawings at job site at all times. Record work completed and all changes from original Contract Drawings clearly and accurately, including work installed as a modification or addition to the original design. Indicate actual circuiting, light fixture locations, device outlet locations, switch assignments, loadcenter schedule, etc.

1.03 RELATED WORK SPECIFIED UNDER OTHER SECTIONS

- A. The following items of work are specified and included under other sections of the specifications:
 - 1. Section 21.00.00 Plumbing
 - 2. Section 23.00.00 HVAC
- B. Painting of electrical conduits, pull boxes, hangers, panelboard doors and trim, and all other electrical equipment, to match the surrounding finish as directed by the Architect, shall be done by the General Contractor.
- C. All electric motors shall be furnished and set in place by the trade requiring same and shall be wired by this Contractor.
- D. All control devices including starters, thermostats, pneumatic-electric switches, electric-pneumatic switches, aquastats and alternators required for the automatic temperature control

system shall be furnished and installed under the Heating, Ventilating and Air Conditioning Section of the Specifications unless otherwise indicated on the electrical drawings.

- E. All automatic temperature control wiring and raceways, including wiring all control devices shall be provided under the Heating, Ventilating and Air Conditioning Section of the Specifications unless otherwise indicated on the electrical drawings.
- F. All temporary power shall be provided by the General Contractor.
- G. All removal and disposal of demolished electrical items shall be provided by the General Contractor.
- H. All cutting, patching and painting required for the electrical work shall be provided by the General Contractor.

1.04 SUBMITTALS

- A. Submit shop drawings and manufacturer's product data in accordance with the provisions of the General Conditions. Submit quantity of copies as requested.
- B. List of material and equipment requiring shop drawings shall include, but is not limited to:
 - 1. Wire and Cable
 - 2. Wire and Cable Connectors and Devices
 - 3. Raceways and Fittings
 - 4. Boxes
 - 5. Wiring Devices and Device Plates
 - 6. Disconnect Switches
 - 7. Circuit Breakers
 - 8. Meter Center
- C. Submittals shall be indexed from list above. Add additional items to end of list. Check, stamp and mark with project name shop drawings and product data before submitting for approval. Specifically indicate on shop drawing transmittal form or by separate letter any deviations from Contract Documents because of standard shop practice or other reason. Cross out, but do not obliterate, material not intended for inclusion in the Work. Clearly indicate material to be included in the Work.
- D. Submit for approval all materials incorporated in the Work. Installation of material which is not approved shall be at the risk of this Contractor, and the Owner may order that it be removed and/or replaced.
- E. Submit samples of any material or equipment requested, prior to approval.
- F. The Engineer will review one initial submittal, and one re-submittal of any item. If review, of re-submittals beyond the first re-submittal are required; this Contractor shall bear the Engineer's cost to review the re-submittal. If materials which have previously been approved or approved-as-noted are re-submitted, this Contractor shall bear the Engineer's cost to review the re-submittal.

1.05 CODES, ORDINANCES AND PERMITS

- A. All Work shall be done in strict accordance with the Codes, rules and regulations governing electrical work in the City of Fitchburg, and the Commonwealth of Massachusetts, and the Massachusetts Electrical Code. If there is any conflict between plans or specifications and such rules and regulations, the rules and regulations shall take precedence.
- B. The publications and/or standards listed below form a part of this specification. The publications are referenced in text by the basic designation only.
1. National Fire Protection Association (NFPA) - USA:
 - a. No. 70 National Electrical Code (NEC)
 - b. No. 72 National Fire Alarm and Signaling Code
 - c. No. 241 Standard for Safeguarding Construction, Alteration, and Demolition Operations
 2. Commonwealth of Massachusetts
 - a. 527 CMR 12.00 Massachusetts Electrical Code
 - b. 780 CMR Massachusetts State Building Code, 9th Edition and it's reference standards
 - c. 521 CMR Massachusetts Regulations of the Architectural Access Board
 3. Commonwealth of Massachusetts, Dept of Housing and Community Development
 - a. Design and Construction Guidelines and Standards, Division 26 Electrical.
- C. Perform work strictly as required by rules, regulations, standards, codes, ordinances, and laws of local, state, and federal government, and other authorities that have lawful jurisdiction.
- D. Give notices, file plans, obtain permits and licenses, and obtain all necessary approvals from authorities that have jurisdiction. Coordinate with General Contractor for submission of, and/or prepare and submit, an NFPA 241 plan as required by the AHJ. Deliver all certificates of inspection to the Architect. No work shall be covered before examination and approval by the Authority Having Jurisdiction. Replace any imperfect or condemned work with materials conforming to the requirements, and satisfactory to the Architect, without extra cost to the Owner. This Contractor is responsible to obtain all permits.
- E. Where the Engineer is to witness testing or perform inspections of work, provide not less than seven (7) calendar days notice to the Engineer of such inspections or testing. At or before request for completion inspection, provide completed as-built plans for review by the Engineer at the final inspection.
- F. Where the local Authority Having Jurisdiction (AHJ) requires work which is not included in the Contract, and where such work will result in an added cost to the Owner, this Contractor shall obtain such requirement from the AHJ in writing. Such requirements shall be supported by applicable code, ordinance or law citation(s), or other justification, to the full satisfaction of the Owner.

1.06 INSPECTION OF SITE

- A. Prior to submitting a bid, the bidder is advised to with prior arrangement with the Owner, visit the site (See Advertisement for site date) and shall at that time, inspect all existing conditions to ascertain the exact scope and nature of the work that is required under this Contract, how it relates to existing work to remain and all job conditions and restrictions.

- B. Bidders are advised to visit the site and inform themselves as to conditions under which this work will be performed, prior to submitting prices. Failure to do so will, in no way relieve the successful bidder from the responsibility of furnishing any materials or performing any work in accordance with the true intent of the Drawings and Specifications.
- C. No claim for extra compensation will be recognized if difficulties are encountered which an examination of the site conditions, Drawings and Specifications prior to executing the Contract would have revealed.

1.07 STORAGE AND REMOVAL OF MATERIALS

- A. Provide suitable containers on-site for storage of materials, or store material off-site. Type and location of containers shall be subject to the approval of the Engineer.
- B. The General Contractor shall provide suitable containers for all demolition and waste materials generated by this work.

1.08 CHANGES IN THE WORK

- A. Any addition, deletion or change in the work which affects the contract sum will be addressed via a change order. This Contractor may be noticed to proceed with the work while the change order paperwork is being processed via a bulletin, construction change directive, or other document.
- B. In addition to any requirements listed in other sections of the contract, any proposals shall be fully supported by documentation of costs, including material quantities and unit costs, labor units, labor rates and any mark-ups in accordance with the contract. Any sub-contractor proposals shall be similarly detailed. Material unit costs shall be based on the proposer's actual costs, which shall be documented by vendor quotes, invoices or other upon request. Material prices from estimating or pricing guides will not be accepted. Material prices which are in excess of the retail costs of materials in the area will not be accepted.
- C. Any change order proposal shall also state the impact, if any, on the contract duration. If no such statement is made, the contract duration will remain unchanged.
- D. The proposer shall bear the costs associated with reviewing, documenting and processing any change orders which are the result of a failure to properly carry out the work, or other proposals which are 1) not requested by the Owner, Architect or Engineer, or 2) are not the result of differing conditions.
- E. Where the work is under construction control, any change to the work deviating from the approved construction documents must be submitted to and approved by the engineer in advance via a request for information (RFI). The reason(s) for the change must be clearly stated, such as field interference, AHJ request, convenience, etc. Unapproved changes will prevent the issuance of a Final Construction Control Document, acceptance of the work, and payment for unapproved work. The Engineer's costs for addressing RFIs as a result of proposed changes which are for the convenience of the Contractor shall be paid for by the Contractor. Regardless of the reason, approved changes shall be marked on the as-built drawings by the Contractor.

1.09 SAFETY

- A. The General Contractor and this Contractor shall be jointly responsible for all safety on the Project. This shall include safety to the workers, Tenants, the Engineer and Owner and their

respective employees. The General Contractor shall develop and implement all safety programs required by mandated and industry standard regulations.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Products furnished shall be designed and approved for the intended use, shall meet all requirements of the Massachusetts Electrical Code (MEC), and local codes, shall be manufactured in accordance with the standard indicated, and shall meet the requirements specified in the Contract Documents. Materials and equipment shall be listed by a nationally recognized testing laboratory.
- B. All material incorporated in the Work shall be new and unused. Samples of any material or item shall be furnished upon request of the Engineer, prior to approval.
- C. All products shall be rated for and approved for use in the application shown, regardless of any notations on the plans. Equipment located outdoors or in wet locations shall be weatherproof, and/or enclosed in suitably rated enclosures. All equipment shall be rated for the current, voltage and phases at which they are applied.
- D. All workmanship shall be of the highest quality, as determined by the Engineer. This Contractor will be required to repair or replace all Work which is not of the highest quality and workmanship.
- E. All equipment and components shall be installed in strict compliance with manufacturers' recommendations. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc., before beginning system installation.
- F. It is the intent of the Specifications that one manufacturer be selected, not a combination, for any particular classification of material. For example, all wire of one manufacturer, all switches of one manufacturer, etc.
- G. Where materials, equipment, apparatus, or other products are specified by manufacturer, brand name, type or catalog number, such designation is to establish standards of performance, quality, type and style.
- H. This Contractor shall be responsible for ordering and furnishing the correct quantity of material required. Routing and equipment arrangements shown on the drawings are approximate only and are not warranted to be accurate.
- I. Devices and equipment shall not require batteries to operate, unless expressly specified.

2.02 WIRE AND CABLE

- A. General
 - 1. Minimum wire size shall be No.14 AWG.
 - 2. All conductors shall be annealed copper, 98% conductivity, Class B stranding, except No.10 AWG and smaller diameter may be solid.
 - 3. Aluminum conductors are not allowed.
 - 4. Minimum sizes shall be No. 12 AWG for power and lighting and No. 14 AWG for control.
 - 5. Conductors shall be identified (colored) as required by the MEC.

6. Wire and cable in underground ducts shall be approved for use in wet locations.
 7. Wire and cable shall be manufactured by General Cable Co., American Wire, Okonite, or approved equal.
- B. NEC Type THWN/THHN: UL 83
1. Conductors for power, lighting, grounding and control; above grade; No. 14 AWG through No. 8 AWG; shall be NEC type THWN/THHN.
- C. NEC Type MC: UL 1569, with full size grounding conductor, and steel or aluminum interlocked armor sheath.
1. Metal-Clad cable shall have full size green grounding conductors.
 2. Metal-Clad cable shall be used in concealed locations only. Concealed locations include above ceilings and within dry wall partitions.
 3. Metal-Clad cable shall be used in dry locations only.
 4. Metal-Clad cable shall be used in all areas of assembly and immediately adjacent areas.
- D. Mini-Split System Cable, ASTM B-3, with full size grounding conductor, moisture and sunlight resistant suitable for indoor and outdoor use.
1. Southwire EZ-In Mini-Split MC Cable, Houston Wire Ductt-Strip, Rectorseal CAB14, or approved equal

2.03 WIRE AND CABLE CONNECTORS AND DEVICES

- A. Wire and Cable Connectors and Devices: UL 486.
- B. Ground conductors of # 14, 12 and 10 AWG shall be made up using only green wire nuts with grounding pigtail provisions.

2.04 RACEWAYS

- A. Rigid Galvanized Steel (RGS): UL 6. Fittings – threaded.
- B. Electrical Metallic Tubing (EMT): UL 797. Fittings – compression one inch and below, set screw over one inch. Pre-painted raceways are not acceptable.
- C. Flexible Metallic Conduit (FMC): UL 1.
- D. Liquid-tight Flexible Metallic Conduit (LFMC): UL 360. Use for connections at exterior mounted equipment, or other location exposed to weather or wet conditions.
- E. Fittings for metallic raceway shall be steel. Connectors for EMT, FMC, LFMC shall have insulated throat.
- F. Steel supports or racks shall be galvanized steel channel and fittings. Supports shall be manufactured by Unistrut, Kindorf, Husky Products Company, or approved equal. Steel support rods or support bolts for conduits shall be 1/8" diameter for each inch or fraction thereof of diameter of conduit size, but no rod or bolt shall be less than 1/4" in diameter.
- G. All required fittings, offsets and bends required shall be provided to route the conduits from source to destination, whether these are shown on the plans or not. Contractor shall/may arrange conduits as required to avoid obstructions, and account for field conditions. Provide all supports as required by the National Electrical Code.

2.05 BOXES

- A. Outlet Boxes: UL listed, NEMA OS 1, with marked volume. Size boxes in accordance with volume requirements of MEC.
- B. Outlet boxes shall be specifically designed for the construction encountered, with suitable supports and attachments.
 - 1. Outlet boxes shall be metallic, in gangs and configurations to suit the application, with suitable wire/cable clamps as required. Outlet boxes shall be flush mounted in all finished areas. Ceiling outlet boxes shall be listed and rated for support of light fixtures up to 50 pounds.
 - 2. Surface mounted outlet boxes shall be specifically designed for the construction encountered, with suitable supports and attachments. Outlet boxes shall be metallic, in gangs and configurations to suit the application. Outlet boxes may be surface mounted in unfinished areas.
- C. Pull boxes shall be code gauge sheet steel, painted, with screw covers. In wet, exterior or basement areas, provide galvanized sheet steel boxes, with gasketed cover. Where dimensions are shown, these are based on no splices. Increase dimensions as required if splices are provided in pull boxes
- D. Where required, provide outlet box extensions to bring front of outlet box flush with mounting surface, per MEC 314.22.
- E. Existing device outlet boxes may be reused only where 1) boxes are securely mounted, 2) boxes meet volume requirements of the MEC, 3) the box is in usable, good overall condition and 4) the box can be used with the wiring method employed. Otherwise, new devices shown at the location of an existing device to be removed shall be provided with a new outlet box suitable for the device.
- F. Where existing device outlet boxes are re-used or connected to, provide box extensions suitable for the installed area, to comply with MEC 314.16. Also provide all adapters, rings, etc, for mounting new devices on existing outlet boxes as required. In finished spaces, rings, extensions and adapters shall be finish appearance type approved by the Architect.
- G. Junction boxes shall be of size and type to accommodate (1) structural conditions, (2) size and number of raceways, conductors or cables entering, splices, and (3) devices or fixtures for which required.
- H. Special care shall be taken to set all boxes correctly square and true with the building finish. Junction boxes and accessories shall be as manufactured by Steel City, Appleton, Raco, or approved equal.
- I. Exterior receptacles shall be installed in flush mounted boxes with weatherproof device covers as listed below.

2.06 WIRING DEVICES

- A. Receptacles:
 - 1. Specification grade NEMA 5-20R 20A for 20 ampere protected branch circuits, NEMA 5-15R for 15 ampere protected circuits, 125V, side-wired, self-grounding.
 - 2. Receptacles shall be colored as selected by the Architect, with matching color device plate.

3. Ground Fault Circuit Interrupter (GFCI, GFI) duplex, 20 amp, 120 volt, specification grade, 5 mA sensitivity/trip, Class A, with pilot light. GFCI receptacles shall include self-test feature, and comply with UL 943 edition in effect at time of permitting. Where non-GFI receptacles are mounted in common view with GFI receptacles, provide "designer" type receptacle to match appearance of GFI receptacle.
 4. Receptacles located in exterior, damp or wet locations shall be listed as weather resistant.
 5. Receptacles located in exterior locations shall be GFI type.
 6. Receptacles located in unfinished basements or crawl spaces shall be GFI type.
 7. All 125 volt 15 ampere and 20 ampere receptacles shall be listed as tamper resistant.
- B. Device Plates:
1. Device plates shall be stainless steel, one piece, single or multi-gang type selected to match the device or combination of devices. So-called "goof" plates are not allowed.
 2. Weatherproof receptacle plates/covers shall be metallic, pad-lockable rated 'weatherproof while in use'.
- C. Locations of all receptacles and switches to be reviewed with Architect prior to rough-in. Coordinate light switch locations with doors as installed, and install switches on latch side of door. Adjust locations as required, without cost. Provide three way switching for lighting at rooms with multiple entries, and at top and bottom of all stairs. Layout and locations of all switching must be confirmed with Architect and Owner prior to rough-in.
- D. Wiring devices shall be manufactured by Pass & Seymour/Legrand, Hubbell or Leviton.

2.07 DISCONNECT SWITCHES

- A. Disconnect switches shall be NEMA Heavy Duty Type HD, three pole disconnects with ampere rating as shown on the plans.
- B. Disconnect switches located indoors shall be furnished in NEMA 1 general purpose enclosures, and NEMA 3R for outdoor areas or in wet locations. Enclosures shall be of code gauge (UL 98) sheet steel (NEMA 1) or code gauge phosphate treatment with gray baked enamel finish.
- C. Disconnects shall be padlockable in the off position, and include a cover interlock to prevent opening while the disconnect is in the 'ON' position. Interlock shall have a defeat feature.
- D. Disconnects shall be horsepower rated for 600 volts AC. Where required or shown switches shall be fused type with dual element fuses, rated as indicated on the plans, or as required by equipment manufacturer.
- E. Switch blades shall be fully visible in the OFF position with the door open. All current-carrying parts shall be copper and plated through electrolytic processes to resist corrosion and promote cool operation. The handle and mechanism shall be an integral part of the box, not the cover.
- F. Manual starter shall be a toggle type switch with overload protection, designed for use on motor circuit. Provide enclosure suitable for area installed.
- G. Safety switches shall be manufactured by Square D, General Electric or Eaton.

2.08 CIRCUIT BREAKERS

- A. Circuit breakers shall be compatible with and listed for use in the existing loadcenters, and shall be as manufactured by the manufacturer of the existing loadcenter.
- B. Circuit breakers shall be quick-make, quick-break molded case type in amperes and poles to suit, or as called for on the Drawings. Where serving lighting circuits, provide switch duty (SWD) rated circuit breakers.
- C. Circuit breakers shall be toggle type, manually operated, trip free with simultaneous opening/closing of all common poles. Trip units shall be thermal-magnetic type.

2.09 EXISTING DISTRIBUTION EQUIPMENT

- A. Where connections are made in existing panelboards or other distribution equipment, the panel index shall be revised to indicate the new loads served. All existing panelboards that do not have a circuit directory card mounted in a frame with noncombustible plastic cover shall have one installed on the inside of the door. All directory cards shall be properly filled in, using a typewriter, and indicate areas and devices served by each unit. Where spares or spaces are provided, mark these designations in pencil by hand.
- B. New circuit breakers, disconnects, starters, etc. added to existing equipment shall be the same frame size and interrupting capacity as existing panelboards and circuit breakers. New circuit breakers installed in existing panelboards shall be listed as fully compatible with the panelboard.

2.10 METER CENTER

- A. Furnish and install the meter centers as specified herein and as shown on the contract drawings. Provide required metering components as per Utility Company Requirements. This shall include, but not be limited to meter stacks, current transformers, bypass, cabinets and the like. Coordinate with Utility for removal/reinstallation of existing or provision of new meter.
- B. The meter centers shall be UL labeled. The meter centers and all components shall be designed, manufactured and tested in accordance with the latest applicable standards, UL67, UL 869 and UL 486B.
- C. Meter Center shall be manufactured by Square D, Siemens, General Electric or approved equal.
- D. The assembly shall be rated to withstand mechanical forces exerted during short-circuit conditions when connected directly to a power source having available fault current 22,000 amperes symmetrical at rated voltage.
- E. The entire assembly shall be front accessible and shall include main lugs or a main disconnect device as indicated on the plans. Tenant disconnects shall be wired for sequence as required by the Utility and shall be molded case circuit breakers. The meter sockets shall be rated 125 amperes, and be compatible with the existing meters. The meter sockets and associated branch protective device positions shall be completely pre-wired and shipped ready for installation of the meters and tenant main breakers. Where unused, meter sockets shall be fitted with glass cover with sealing provisions.
- F. All bus bars shall be copper. Main horizontal bus bars shall be mounted with all phases arranged in the same vertical plane. Bus sizing shall be based on UL standard temperature rise criteria for multiple metering equipment. Provide a full capacity neutral bus, and a ground

- bus. All hardware used for bus bar connections shall be high-tensile strength, zinc-plated. Provide Belleville-type spring washers for all bus joints.
- G. Mechanical-type terminals shall be provided for all line terminations suitable for copper or aluminum cable and rated at 75 degrees C. Lugs shall be provided in the incoming line section for connection of the main grounding conductor.
- H. Provide tenant circuit breakers with metal lockable cover.
- I. Enclosures shall be NEMA 3R surface-mounted. Boxes and trims shall be bonderized and finished with ANSI 61 light gray enamel.
- J. Provide an accessible intersystem bonding terminal at new service equipment for communications utility grounds.

PART 3 – EXECUTION

3.01 MATERIALS AND WORKMANSHIP

- A. Work shall be executed in workmanlike manner and shall present neat, rectilinear and mechanical appearance when completed. Maintain maximum headroom at all times. Do not run raceway exposed unless shown exposed on drawings. Material and equipment shall be new and installed according to manufacturer's recommended best practice so that completed installation shall operate safely and efficiently.
- B. This Contractor shall review installation details of all electrical equipment in public areas with the Architect and cooperate fully with the Architect in this regard. Any work installed which is not reviewed with and approved by the Architect is subject to re-work at no increase in contract price.
- C. All workmanship shall be of the highest quality, as determined by the Engineer. This Contractor will be required to repair or replace all Work which is not of the highest quality and workmanship.
- D. All equipment and components shall be installed in strict compliance with manufacturers' recommendations. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc., before beginning system installation.
- E. Conductor fasteners shall be tightened with a torque tool in good condition to factory specifications. At time of inspection, torque tool(s) shall be available to demonstrate proper torque.

3.02 DEMOLITION

- A. Demolish the existing systems to allow installation of the new systems. No components, items or materials are to be re-used, unless specifically noted herein. All demolition material shall become the property of the General Contractor, for his lawful disposal, except any material which the Owner may salvage. Equipment to be turned over to the Owner as salvaged shall be moved to on-site storage as directed by the Owner.

3.03 CONTINUITY OF SERVICES

- A. Do not interrupt existing services without Owner's and Engineer's approvals.

- B. Coordinate fully with Utility providers and schedule Work, shutdowns and cutovers to minimize down time. Tenant units shall be without Utilities (power, telephone and cable television) for no more than 8 hours during each day, during the hours of 8:00 AM and 4:00 PM. Coordinate all Work to comply with this requirement, or provide all temporary Work as required to comply with this requirement. All Utilities at dwelling units shall be operational at the end of each work day.

3.04 TESTING, INSPECTION AND CLEANING

- A. Test wiring and connections for continuity and grounds before fixtures are connected; demonstrate insulation resistance by megger test as required. Insulation resistance between conductors and grounds for secondary distributions systems shall meet NEC requirements.
- B. Verify and correct as necessary: voltages, tap settings, trip settings and phasing on equipment from secondary distribution system to points of use. Test secondary voltages at loadcenters, and at other locations on distribution systems as necessary. Test secondary voltages under no-load and full-load conditions.
- C. Provide necessary testing equipment and testing.
- D. Failure or defects in workmanship or materials revealed by tests or inspection shall be corrected promptly and retested until satisfactory results are achieved. Replace defective material.
- E. Final Inspection
 - 1. At the final inspection, a factory-trained representative of the manufacturer of the major equipment shall demonstrate that the systems function properly in every respect.
- F. Clean panels and other equipment. Panelboard interiors shall be cleaned and vacuumed. Equipment with damage to painted finish shall be repaired to Architect's satisfaction.
- G. After completion of project, clean the exterior surface of equipment included in this section.

3.05 WARRANTY

- A. Materials provided under this section shall be warranted against defects in materials and workmanship by this Contractor for not less than one (1) year from the date of substantial completion.
- B. This Contractor shall respond to the site to address any warranty contact from the Owner within 48 hours. If the defective item can be repaired, it shall be repaired within 48 hours. Repairs shall be to the full satisfaction of the Owner, and repairs which render an item in a condition less than new will not be accepted. If the item cannot be repaired within 48 hours, it shall be replaced within 48 hours. If the item cannot be repaired or replaced within 48 hours, the contractor shall provide such temporary work as directed by the Owner to address the issue until such time as the issue is permanently addressed. If the issue appears to be across all same or similar products, the contractor shall be prepared to address (repair or replace) the remaining items.

3.06 ACCESS AND ACCESS PANELS

- A. Provide proper access to material or equipment that require access, inspection, replacement, repair or service. If proper access cannot be provided, confer with Engineer as to best method of approach to minimize effects of reduced access.

3.07 FIRE BLOCKING AND STOPPING

- A. Provide all materials and labor to penetrate or remove and re-install existing fire blocking, or re-route wiring to avoid fire blocking.
- B. Provide fire stopping for all electrical conduits which enter or pass through fire rated walls or floors. Materials and methods of fire stopping shall be approved by UL. Fire seal fittings shall be used around cable, in sleeves, or in core drilled holes passing through fire rated walls and floors. Fire stopping shall be T&B Fire-Seal, O.Z. Gedney, Minnesota Mining and Manufacturing Company or approved equal.

3.08 WIRING METHODS

- A. Install wire and cable in approved raceways as specified and as approved by authorities that have jurisdiction.
- B. Wiring methods shall be as follows:
 - 1. Interior, finished, dry locations, concealed – EMT or Type MC Cable.
 - 2. Interior, finished, dry locations, exposed – None (conceal wiring methods).
 - 3. Interior, mechanical, electrical or other utility spaces, exposed – EMT or RGS.
 - 4. Interior, wet locations – RGS.
 - 5. Exterior, rising through or above grade – RGS.
- C. Only the best possible workmanship for type MC cable installation shall be accepted. Type MC cable which is not properly supported, neatly installed, or bundled shall be removed and replaced at no additional cost. The acceptability of Type MC cable installation shall be solely the determination of the Engineer.
- D. Provide flexible conduits for connections to electrical equipment and to appliances and equipment that are subject to movement, vibration or misalignment; where equipment connections dictate; and where noise transmission must be eliminated or reduced.
- E. All conductors shall be installed in raceways, as required by the NEC. Wiring shall be concealed in finished spaces.
- F. Splices shall be made only at device outlet boxes. Addition or re-use of boxes in finished areas solely for the purpose of splicing will not be accepted.
- G. All device outlet boxes shall be set flush to the final finish surface. All openings in the surface finish around the box shall be filled in accordance with the MEC. Where device outlet boxes are located in an area with existing device outlet boxes, match mounting heights, but not less than 18" above finish floor. Mount all boxes true and plumb. Patch and paint as needed.
- H. All wiring shall be new. Remove all existing wiring and raceways to the maximum extent possible. Cut back and abandon concealed wiring and raceways.
- I. All conductors shall be neatly arranged and bundled, without excess cable at any point, but with reasonable slack to allow installation and removal of the device.

3.09 GROUNDING

- A. Bond and ground equipment and systems connected under this Section in accordance with standards of MEC and other applicable regulations. Provide approved means for terminating

and connecting grounding conductors, such as lugs, crimp-on terminals, green ground screws, grounding wirenuts, etc.

- B. Conduit system shall be electrically continuous throughout. Equipment frames, enclosures, boxes, etc. shall be grounded by use of green colored equipment ground conductor sized as per Table 250.122 of MEC. Raceway ground alone will not be accepted.
- C. Green bonding jumper shall be installed in flexible conduits.

3.10 MOTORS AND CONNECTIONS

- A. Motors will be provided under other Sections.
- B. Check electrical connections and sizing of motor circuit protection and prevent damage to motors and equipment from incorrect direction of rotation.
- C. Review existing conditions prior to disassembly/disconnection for verification of size, speed, and operation of existing motors.
- D. Consult drawings and specifications and shop drawings for verifications of size, speed, and operation of motors furnished under other Sections.
- E. Final connection to appliances and motors shall be made with flexible conduit (at least 16" long) with green ground wire installed.
- F. Motors, control panels and variable frequency drives (VFDs) will be furnished under other Sections. Equipment disconnects shall be provided on or in sight of unit, mounted, with load conductors to equipment. Make all line connections at the mounted disconnects. Provide all line and load conductors and conduits. Provide 120 volt single phase branch circuits at control panels.
- G. Obtain necessary control wiring and interlocking diagrams from equipment suppliers for installation under this Section and connect equipment circuits for proper sequence of operation. Refer to sequence of operations provided under other Sections, and circuit equipment via control devices such as thermostats, relays, aquastats, contactors, etc.

3.11 WIRING DEVICES

- A. Mount all wiring devices plumb in device outlet boxes. Center devices on boxes, and set true within the device plate. Set device plates so all edges contact surface, and conceal box edge.
- B. Side wire devices only. Back wiring will not be accepted.
- C. Provide GFCI protection for all 15A and 20A, 125V receptacles located in the following locations:
 - 1. Unfinished portions of basements;
 - 2. Outdoors;
- D. Where outlet boxes are not used, remove same. Where an outlet box is removed, patch the opening and touch-up paint.

3.12 CIRCUIT BREAKERS

- A. Install circuit breakers in panelboards. Mark panel schedule accordingly. Panel markings shall be printed by typewriter, printer or other suitable means. Handwriting will not be acceptable. Utilized circuits shall be marked in ink. Spare or spaces shall be so marked in pencil, and may be marked by hand. No circuit shall be described in a manner that depends on transient conditions of occupancy.

3.13 METERING

- A. Standard factory tests shall be performed on the equipment provided under this section. All tests shall be in accordance with the latest version of ANSI and NEMA standards.
- B. Install all equipment per the manufacturer's recommendations and the contract drawings.
- C. All necessary hardware to secure the assembly in place shall be provided by the Contractor.
- D. Label and relocate meters from existing meter sockets to new meter sockets.

3.14 ALTERNATES

- A. Refer to all other applicable sections of the specifications for alternates which may affect the Work of this section.

END OF SECTION 26.00.00

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