



**MASSACHUSETTS DEPARTMENT OF MENTAL HEALTH
OFFICE OF ENGINEERING AND FACILITIES MANAGEMENT**

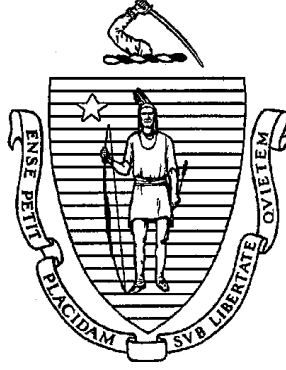
BID PACKAGE

FOR

**2023-072 Renovation to the Office of Engineering
and Facilities Management (OEFM)**

**Hadley Building
167 Lyman Street
Westborough, Massachusetts 01581**

Out to Bid: Wednesday, December 28, 2022



BID PACKAGE

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DMH PROJECT# 2023-072

**RENOVATION TO THE OFFICE OF ENGINEERING AND FACILITIES
MANAGEMENT (OEFM)**

HADLEY BUILDING

167 LYMAN STREET

WESTBOROUGH, MA 01581

NOTICE TO CONTRACTORS

WALK-THRU NOTICE

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PART 2 – FORMS FOR CONTRACT EXECUTION

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**NOTICE TO CONTRACTORS
CLASSIFIED LEGAL ADVERTISEMENT**

**COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE FOR HEALTH AND HUMAN SERVICES
DEPARTMENT OF MENTAL HEALTH
OFFICE OF ENGINEERING AND FACILITIES MANAGEMENT**

General Bids Submission Deadline: **2:00 P.M. Thursday, January 19, 2023**

The Category of Work is: **General Building Construction**

Project Name: **2023-072 Renovation to the Office of Engineering and Facilities Management (OEFM)**

Project Location: **The Hadley Building, 167 Lyman St. Westborough, MA 01581**

Estimated Construction Cost: **\$120,000.⁰⁰**

Subdivision of one office into two and installation of one (1) ductless multizone system, in accordance with the plans and project specifications of this project.

Minimum rates of wages to be paid on the project have been determined by the Commissioner of the Division of Occupational Safety under the provisions of Sections 26 and 27, Chapter 149 of the General Laws and will be included in the bid package.

Proposals will ONLY be submitted online via COMMBUYS website by the General Bids & Sub-bids Submission Deadline dates on forms furnished by the Department of Mental Health (DMH) and clearly identified as a bid, endorsed with the name and address of the bidder, and the project name.

Each general bid proposal must be secured by an uploaded photocopy of an accompanying **deposit of 5%** of the total bid amount, in the form of a bid bond, a certified treasurer's or cashier's check issued by a responsible bank or trust company made payable to the Commonwealth of Massachusetts. Awarded vendor will then mail the original 5% deposit bond or check to the Department of Mental Health, Office of Engineering and Facilities Management, 167 Lyman Street, Room 158, Westborough, MA 01581. The Department reserves the right to waive any informality in or reject any or all Bids if it is in the public interest to do so.

Plans and Specifications will ONLY be available at COMMBUYS from **12/28/2022** thru general bid opening. Bid must be submitted electronically on COMMBUYS by the Submission Deadlines dated above. If you have any questions or concerns with using COMMBUYS, please contact the COMMBUYS help desk at 617-720-3197 (8am - 5pm EST Monday thru Friday).

Pre-Bid Conference: A Pre-Bid Site Visit is NON-MANDATORY for General Contractor and will be held **10:00AM on Wednesday 01/11/2023**. **Contractors shall meet the Project Engineer at the main lobby at Hadley Building at 167 Lyman St. Westborough, MA 01581** to review project details. Please contact DMH Project Engineer, Mariana O'Brien, at (857) 274-1048. **All General bid questions must be posted on COMMBUYS by Thursday 01/12/2023 12:00PM.**

Covid-19 Precaution Notice: Anyone attending site viewing(s) will be required to follow state and city precaution guidelines by wearing the necessary face mask and practicing safe distancing. Contractors will also need to follow building COVID-19 protocols.

Estimated Project Duration is sixty (60) days from Notice to Proceed.

MBW/WBE Contractors are encouraged to inquire about this project.

**DEPARTMENT OF MENTAL HEALTH
BROOKE DOYLE, COMMISSIONER**

DEPARTMENT OF MENTAL HEALTH
OFFICE OF FACILITIES MANAGEMENT
HADLEY BUILDING
167 LYMAN STREET
WESTBOROUGH, MASSACHUSETTS 01581

***RENOVATION TO THE OEFM OFFICE
AT
THE HADLEY BUILDING
167 LYMAN STREET
WESTBOROUGH, MA 01581
(DMH Project #2023-072)***

**NOTICE OF NON-MANDATORY GENERAL
CONTRACTOR PRE-BID CONFERENCE**

ALL CONTRACTORS INTERESTED IN BIDDING ON THIS PROJECT ARE
HEREBY NOTIFIED OF A PRE-BID CONFERENCE AND WALK-THROUGH

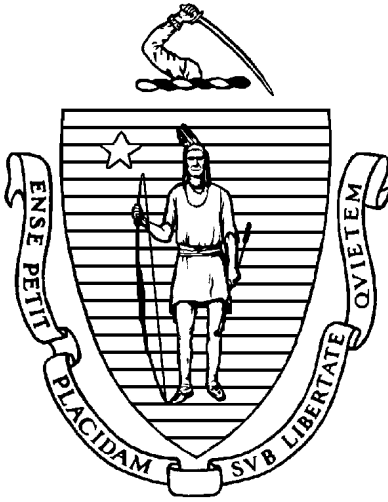
ON

WEDNESDAY, JANUARY 11, 2023

AT

10:00 A.M.

CONTRACTORS ARE TO MEET IN THE MAIN LOBBY OF
THE HADLEY BUILDING



BID PACKAGE

PART I

INSTRUCTIONS TO BIDDERS

For Projects with no Filed Sub Bidders

**2023-072 Renovation to the Office of Engineering and Facilities Management (OEFM)
The Hadley Building
167 Lyman Street
Westborough, Massachusetts 01581**

Instructions to Bidders

Attachment A:

Minimum Wage Rates

Prevailing Wage Schedule – Bidder Acknowledgement

Attachment B: Forms Used During Bidding

Form for General Bid



**COMMONWEALTH OF MASSACHUSETTS
INSTRUCTIONS TO BIDDERS**

Awarding Authority:

Department of Mental Health
Office of Engineering and Facilities Management
Hadley Building
167 Lyman Street
Westborough, MA 01581
Mariana G. O'Brien, DMH Project Engineer
Office Tel: (857) 274 – 1048

**Project Title: 2023-072 Renovation to the Office of Engineering and Facilities Management (OEFM)
The Hadley Building
167 Lyman Street
Westborough, Massachusetts 01581**

Category of Work: GENERAL BUILDING CONSTRUCTION

Project Description and Scope:

Subdivision of one office into two and installation of one (1) ductless multizone system, in accordance with the plans and project specifications of this project.

Deadline for filing General bids is at: 2:00 PM Thursday January 19, 2023

The minimum wage rate requirements for this Contract are located in Attachment A to these Instructions to Bidders.

Pursuant to M.G.L. c. 30, §39S(a) (2) all employees to be employed on the project must have successfully completed a course in construction safety and health approved by OSHA and of at least 10 hours in duration.

The Contractor must provide written verification as detailed in the General Conditions of compliance with Federal Department of Homeland Security Requirements, including but not limited to the Employment Eligibility Verification (Form I-9) Process.

Bid forms for this Contract are located in Attachment B to these Instructions to Bidders.

COVID-19 Precaution Notice: Anyone attending site viewing(s) will be required to follow state and city precaution guidelines by wearing the necessary face mask and practicing safe distancing.

The estimated time for completion of the Work is 60 days, and will be specified in Article 2 of the Owner - Contractor Agreement for the successful bidder. Liquidated damages for failure to complete work on time is \$500 per day, and will be stated in Article 7 of the Owner - Contractor Agreement.

Bidding Documents must be obtained via COMMBUYS website. If you need assistance with COMMBUYS, please call the COMMBUYS help desk at (617) 720-3197. COMMBUYS Job Aids for Vendors on how to use COMMBUYS are available by clicking the link below.

<https://www.mass.gov/lists/job-aids-for-vendors-using-commbuys>

The filed subtrades for this project are as follows: **(not applicable)**

As used herein, capitalized terms shall have the meaning assigned to them in the General Conditions of the Contract and the Owner - Contractor Agreement unless the context clearly indicates otherwise.

SECTION I - BIDDER'S REPRESENTATION

1.1 Each general bidder or sub-bidder (hereinafter sometimes referred to as "Bidder") by making a bid or sub-bid (hereinafter sometimes referred to as "Bid") represents and warrants that Bidder has visited and examined the Site and the Contract Documents, that Bidder is familiar with the local conditions under which the Work is to be performed, that Bidder has correlated personal observations with the requirements of the Contract Documents, and that where the Contract Documents require, in any part of the Work, a given result to be produced, the Contract Documents are adequate and that Bidder will produce the required result within the Bid price and that the Bid is made in accordance therewith.

1.2 Failure to so examine the Contract Documents and the Site will not relieve any Bidder from any obligation under the Bid as submitted. Neither the Commonwealth nor the Designer will be responsible for errors, omissions and/or charges for extra work

arising from Bidder's failure to familiarize itself with the Contract Documents or existing conditions.

SECTION 2 -- GENERAL BIDDERS - CERTIFICATE OF ELIGIBILITY AND UPDATE STATEMENT (NOT APPLICABLE)

2.1 (not applicable) Every general bidder must submit the following with its general bid:

--A Prime/General Contractor Certificate of Eligibility issued by the Division of Capital Asset Management and Maintenance (DCAMM), showing that the Bidder has been approved to bid on projects for the category of work required and that the Bidder has a single project limit in an amount no lower than the amount of its Bid including all "add" alternates.

--A fully completed Prime/General Contractor Update Statement.

2.2 (not applicable) It is the Bidder's responsibility to obtain the necessary forms from DCAMM and to submit its Application for Certificate of Eligibility so as to allow sufficient time for DCAMM's evaluation of the application and issuance of a Certificate of Eligibility prior to the deadline for bidding.

2.3 (not applicable) The Prime/General Contractor Update Statement is not a public record as defined in M.G.L. c. 4, § 7 and will not be open to public inspection.

SECTION 3 -- FILED SUB-BIDDERS - CERTIFICATE OF ELIGIBILITY AND UPDATE STATEMENT (NOT APPLICABLE)

3.1 (not applicable) Every filed sub-bidder must submit the following with each filed sub-bid:

--A Sub-Bidder Certificate of Eligibility issued by the Division of Capital Asset Management and Maintenance (DCAMM) for that sub-bid trade, showing that the sub-bidder has been approved to bid on projects of the category of work required.

--A fully completed Sub-Bidder Update Statement.

3.2 (not applicable) It is the sub-bidder's responsibility to obtain the necessary forms from DCAMM and to submit its Application for Sub-bidder Certificate of Eligibility so as to allow sufficient time for DCAMM's evaluation of the application and issuance of a Sub-Bidder Certificate of Eligibility prior to the deadline for bidding.

3.3 (not applicable) The Sub-Bidder Update Statement is not a public record as defined in M.G.L. c. 4, §7 and will not be open to public inspection.

SECTION 4 -- REQUESTS FOR INTERPRETATION

4.1 Any questions by prospective Bidders concerning interpretation of the Contract Documents must be uploaded to COMMBUYS by **Thursday January 12, 2023 by 12:00PM**. The Awarding Authority will post any addenda or written interpretations on COMMBUYS that it deems necessary to Bidders at least 48 hours before the General Bids Submission Deadline Date. Bidders may NOT rely upon oral communications or interpretations from the Awarding Authority or the Designer and the Awarding Authority shall not be bound by them.

4.2 It is the sole responsibility of the Bidder to ascertain the existence of any addenda issued by the Awarding Authority on COMMBUYS, by Bidder.

4.3 Wherever in the Contract Documents reference is made to Massachusetts General Laws, it shall be construed to include all amendments thereto effective as of the date of the issuance of the invitation to bid on the proposed work.

SECTION 5 -- PREPARATION OF BIDS; ALTERNATES

5.1 General Bids shall be submitted on the Form for General Bid included in Attachment B to these Instructions to Bidders.

5.2 All entries on the Bid form shall be typewritten or in ink.

5.3 Where so indicated on the Bid form, sums shall be expressed in both words and numerals. Where there is a discrepancy between the Bid sum expressed in words and the Bid sum expressed in figures, the Bid sum expressed in words shall control unless the intention of the Bidder clearly is otherwise as determined by the Awarding Authority in its sole discretion.

5.4 Each general Bidder shall acknowledge all required alternates in Section C on the Form for General Bid by entering the dollar amount of addition or subtraction necessitated by the alternate. General Bidders shall enter on the Form for General Bid a single amount for each alternate that shall consist of the sub-Bidders' amounts and the amount for work performed by the general Bidder.

5.5 If an alternate includes work within the Bidder's scope of work and does not involve a change in the cost of the Bid, the Bidder shall so indicate by writing "No Change" or "N/C" or "0" in the space provided for that alternate.

5.6 The lowest Bidder will be determined on the basis of the sum of the base Bid and the accepted alternates.

5.7 (not applicable) If the space for indicating a requirement for payment and performance bonds for filed subcontractors is left blank by the general Bidder on the Form for General Bid, the Awarding Authority shall interpret this as a "No."

5.8 (not applicable) Costs for subcontractors' bond premiums shall be paid for by the general Contractor in accordance with M.G.L. c. 149, § 44F unless the project is a project in which contractor and subcontractor prequalification are required pursuant to M.G.L. 149, §§ 44D1/2 or 44D3/4.

5.9 (not applicable) If the general Bidders are instructed to carry an amount for a given subtrade listed under Item 2, general Bidders shall list the subtrade and the amount provided by the Awarding Authority. The line under "bonds required" on the Form for General Bid should be left blank or marked "N/A" in order for subsection 5.10 to apply.

5.10 (not applicable) Upon solicitation of a subcontractor to perform the work required with respect to a subtrade referenced in subsection 5.9, the general Bidder's Contract Price shall be adjusted by the following: a) the difference between the subcontract amount and the amount carried in the general Bid; b) the total cost of the subcontractor's bonds, if the general Bidder requires such bonds after the solicitation is completed and if the general Bidder complied with 5.9 above; c) the documented increased costs for the general Bidder's bonds, if any, attributable to the incremental difference between the amount carried for the given subtrade and the actual subcontract amount.

5.11 (not applicable) Overhead and profit for supervision of the subtrade mentioned in subsections 5.9 and 5.10 above shall be included by all general Bidders in Item 1 of the subdivision of the Contract Price. No additional overhead or profit will be paid on the incremental difference between the amount carried for the subtrade and the subcontract amount as stated in M.G.L. c. 149, § 44F(4)(a)(2).

5.12 (not applicable) Sub-Bidders should not list Paragraph E sub-subcontractors unless requested to do so by the Awarding Authority.

5.13 Each general Bid ~~and each Bid of a filed subcontractor~~ must be accompanied by a bid deposit in the form of a bid bond; cash; or a check certified by, or a treasurer's or cashier's check issued by, a responsible bank or trust company, payable to the Commonwealth of Massachusetts. Any bid bond shall be (a) in a form satisfactory to the Awarding Authority, (b) with a surety company qualified to do business in the Commonwealth and (c) conditioned upon the faithful performance by the principal of the agreements contained in the Bid.

5.14 The amount of such bid deposit shall be **5% five per cent** of the value of the Bid including alternates.

SECTION 6 - SUBMISSION OF BIDS

6.1 Each general Bid, **including a photo copy of the bid deposit** shall be uploaded into COMMBUYS.

General Bid for:

**Project Title: 2023-072 Renovation to the Office of Engineering and Facilities
Management (OEFM)
The Hadley Building
167 Lyman Street
Westborough, Massachusetts 01581**

General Bidders name, business address, and telephone number.

6.2 All Bids must be received by the Awarding Authority via the COMMBUYS Website no later than the **Deadline for Filing General Bid date** specified on page two of these Instructions to Bidders. Any Bid received after this deadline date and time will not be accepted.

SECTION 7 - WITHDRAWAL OF BIDS; REJECTION OF BIDS

7.1 Any Bid may be withdrawn prior by emailing Mariana G. O'Brien at **mariana.g.obrien@mass.gov** prior to the **Deadline for filing General Bid date on page two.**

7.2 A Bidder may withdraw its Bid without penalty by emailing Mariana G. O'Brien at **mariana.g.obrien@mass.gov** at any time up to the time of Award as defined below in subsection 9.1 only upon demonstrating to the satisfaction of the Awarding Authority that a death or disability has occurred or a bona fide clerical or mechanical error of a substantial nature was made during the preparation of the bid. Failure to demonstrate conclusively that a bona fide clerical or mechanical error of a substantial nature was made may result in forfeiture of the Bid deposit.

7.3 The Awarding Authority reserves the right to waive any informality in or to reject any and all Bids if it is in the public interest to do so. Without limiting the foregoing, the Awarding Authority reserves the right to reject unit prices which it deems unduly high or unduly low as unbalanced.

SECTION 8 - MBE AND WBE PARTICIPATION (not applicable)

SECTION 9 -- CONTRACT AWARD

9.1 "Award" means the determination, selection, and notification of the lowest, responsible and eligible Bidder by the Awarding Authority.

9.2 The Awarding Authority will award the Contract within thirty (30) days, Saturdays, Sundays, and legal holidays excluded after the opening of Bids in accordance with M.G.L. c.149 §44A.

9.3 The Contract will be awarded to the lowest responsible and eligible Bidder as determined by the Awarding Authority, 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.

9.4 As used herein, the term "lowest responsible and eligible Bidder" shall mean the general Bidder whose Bid is the lowest of those Bidders who, in the Awarding Authority's opinion, are ready, willing and able to comply with all requirements of the Contract Documents and demonstrably possess the skill, ability, and integrity necessary for the faithful performance of the Work, based on the determination of past performance and financial soundness under (i) M.G.L. c.149 §44A and following sections, (ii) the rules, regulations, orders, guidelines and policies promulgated from time to time by the Commissioner of the Division of Capital Asset Management and Maintenance ("DCAMM") and (iii) any other relevant criteria that the Commissioner may prescribe. If the Awarding Authority determines that any non-filed subcontractor chosen by a Bidder is not qualified or responsible, then the Bidder shall obtain another subcontractor satisfactory to Awarding Authority and the contract price shall not be adjusted.

9.5 The general Bid price shall be the price set forth in paragraph C of the Form for General Bid. No general Bid shall be rejected (i) because the sum of the prices set forth in Item 1 and 2 does not equal the general Bid price set forth in said paragraph C or (ii) because of one or more errors in setting forth the name, the sub-Bid price of a sub-Bidder, or the total of Item 2, provided that the sub-Bidder or sub-Bidders designated are clearly identifiable, or (iii) because the plans and specifications do not accompany the Bid or are not submitted with the Bid.

9.6 Should the Contract Documents require submission of special data to accompany the Bid, the Awarding Authority reserves the right to rule the Bidder's failure to submit such data an informality and to received said data subsequently within a reasonable time as set by the Awarding Authority, provided that no such ruling shall result in an unfair advantage to the Bidder.

9.7 The Awarding 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 fewer than three sub-Bids are received for a sub-trade, and the Bid prices are not reasonable for acceptance without further competition.

9.8 If the Awarding Authority decides to reject all general Bids or if the Awarding Authority does not receive any general Bids, the Awarding Authority may retain and use the sub-Bids received for a second opening of general Bids; provided, however, that there are no changes in the work involved for the subtrades for which the sub-Bids are so retained and used; and provided, further, that the Awarding Authority shall obtain the

consent of each sub-Bidder included in any award of a general Contract made pursuant to the second opening of general Bids if such award is not made within ninety days, Saturdays, Sundays and legal holidays excluded, after the opening of such sub-Bids.

SECTION 10 - EXECUTION OF CONTRACTS

10.1 If a selected filed sub-Bidder fails, within five days, Saturdays, Sundays and legal holidays excluded, after presentation of a Subcontract by the general Bidder to which the Contract was awarded, to perform its agreement to execute a Subcontract in the form provided by the Awarding Authority with such general Bidder contingent upon the execution of the general Contract, and, if requested to do so by such general Bidder in the general Bid, to furnish a 100% payment bond and a 100% Performance Bond as stated in its filed sub-Bid, such general Bidder and the Awarding Authority shall select from the other filed sub-Bids duly filed with the Awarding Authority for such sub trade and not rejected the lowest responsible and eligible filed sub-Bidder at the amount named in its filed sub-Bid as so filed against whose standing and ability the general Contractor makes no objection, and the Contract price shall be adjusted by the difference between the amount of such filed sub-bid and the amount of the sub-bid of the delinquent filed sub-Bidder.

10.2 Upon receipt of the Award, the general Bidder awarded the Contract shall submit a properly executed original of each of the following documents prior to execution of the Contract by the Awarding Authority. All such documents shall be in the form prescribed by the Awarding Authority.

- Owner-Contractor Agreement
- 50% Payment Bond with power of attorney attached
- Certificates of Insurance evidencing coverages in amounts required by the Contract Documents
- Any other documents that the Awarding Authority may reasonably require in connection with the Contractor's execution of the Contract.

-Written representation by the General Contractor to the effect that it has presented subcontracts to all selected filed sub-Bidders and a statement as to whether or not each such selected filed sub-Bidder has executed its subcontract such that the Awarding Authority may release the Bid deposit with respect to the same. **Misrepresentation of the foregoing shall render the general Contractor liable to the Awarding Authority for the sum of any Bid deposit released by the Awarding Authority with respect to a filed sub-Bidder that fails to execute its subcontract.**

10.3 Please note that **no part of the General Contractor's work may be subcontracted without the prior written approval of the Awarding Authority.** If the General Contractor desires to subcontract any part of the Work, other than work covered by Item 2, filed sub-Bidders, the General Contractor must promptly forward to the Awarding Authority a list in triplicate designating the work to be performed and the name of each

proposed subcontractor for approval by the Awarding Authority. Approved subcontractors are eligible for direct payments under M.G.L. 30, § 39F, as amended. Material suppliers not involving site labor need not be submitted for approval.

SECTION 11 - RETURN OF BID DEPOSITS

11.1 If no award is made, upon the expiration of the time prescribed in M.G.L. c. 149, § 44A for making an award; except that, if any general Bidder fails to perform its agreement to execute the Contract and furnish a 50% Payment Bond as stated in its Bid, then said general Bidder's Bid deposit shall become the property of the Commonwealth as liquidated damages; provided that the amount of the Bid deposit that becomes the property of the Commonwealth shall not exceed the difference between the Contractor's Bid price and the Bid price of the next lowest responsible and eligible Bidder; and provided further that, in the case of death, disability, bona fide clerical or mechanical error of a substantial nature, or other similar unforeseen circumstances affecting the general Bidder, such general Bidder's Bid deposit shall be returned.

11.2 If a selected sub-Bidder fails to perform its agreement to execute a sub-contract with the general Bidder selected as the general Contractor, contingent upon the execution of the General Contract, and, if requested to do so in the general Bid by such general Bidder, to furnish a Performance and Payment Bonds as stated in its sub-Bid in accordance with M.G.L. c. 149, § 44F(2), the Bid deposit of such sub-Bidder shall become the property of the Commonwealth as liquidated damages, provided that the amount of the Bid deposit that shall become the property of the Commonwealth shall not exceed the difference between its sub-Bid price and the sub-Bid price of the next lowest responsible and eligible sub-Bidder.

11.3 In addition to the provisions for the return of Bid deposits as provided above, upon receipt of a Bid Bond in an amount not less than the amount of the required Bid deposit, the Awarding Authority shall return any Bid deposit of a Bidder forthwith after the public opening of Bids.

ATTACHMENT A

PREVAILING WAGE SCHEDULE/OSHA 10 HRS ACKNOWLEDGEMENT

The minimum wage rates provided in the following pages have been provided by the Division of Occupational Safety of the Massachusetts Department of Labor and Workforce Development. The Awarding Authority is not responsible for errors or omissions in such wage rates.

M.G.L. c. 149, §§ 26 and 27 provide as follows:

" . . . Payments by employers to health and welfare plans, pension plans and supplementary unemployment benefit plans under collective bargaining agreements or understandings between organized labor and employers shall be included for the purpose of establishing minimum wage rates as herein provided.

. . . The aforesaid rates of wages in the schedule of wage rates shall include payments by employers to health and welfare plans, pension plans and supplementary unemployment benefit plans as provided in said section twenty-six, and such payments shall be considered as payments to persons under this section performing work as herein provided. Any employer engaged in the construction of such works who does not make payments to a health and welfare plan, a pension plan and a supplementary unemployment benefit plan, where such payments are included in said rates of wages, shall pay the amount of said payments directly to each employee engaged in said construction"

Wage Request Number: 20221227-006

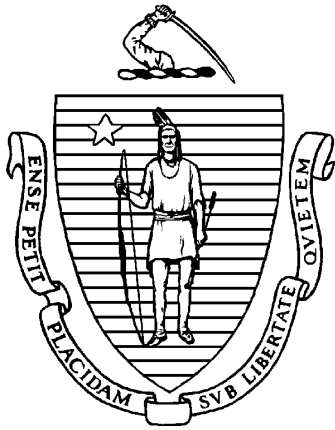
The undersigned hereby certifies that it is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by 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 it will comply fully with all laws and regulations applicable to awards made subject to section 39M of Chapter 30 of the General Laws.

Bidder acknowledges receipt of the most recent prevailing wage rates and has incorporated said rates into their proposed bid(s).
Signature: _____
Name and Title: _____

**ATTACHMENT B:
Forms Used During Bidding**

- 1) Form for General Bid
- 2) Bidder Check list
- 3) Prevailing Wage Schedule/OSHA 10 Hours Acknowledgement (Attachment A)

**Executive Office for Health and Human Services
Department of Mental Health
Office of Engineering and Facilities Management
Hadley Building
167 Lyman Street
Westborough, MA 01581
Mariana G. O'Brien, DMH Project Engineer
Office Tel: (857) 274-1048**



**COMMONWEALTH OF MASSACHUSETTS
FORM FOR GENERAL BID**

**2023-072 Renovation to the Office of Engineering and Facilities
Management (OEFM)
The Hadley Building
167 Lyman Street
Westborough, Massachusetts 01581**

The following **must** be uploaded into **COMMBUYS** as part of this bid:

1. A photo copy of the Bid deposit meeting the requirements of Section 5.13 and 5.14 of the Instructions to Bidders uploaded into COMMBUYS.
2. **(Not Applicable)** Complete Statement of Prior Relevant Experience, Facilities, Equipment, References and any other information called for as further set forth in Project Specifications.
3. Prevailing Wage Schedule/OSHA 10 Hours Acknowledgement (See Attachment A)

FORM FOR GENERAL BID

To the Awarding Authority: **DEPARTMENT OF MENTAL HEALTH (DMH)**

A. The undersigned proposes to furnish all labor and materials required for

Project Name: **2023-072 Renovation to the Office of Engineering and Facilities Management (OEFM)
The Hadley Building
167 Lyman Street
Westborough, Massachusetts 01581**

in accordance with the accompanying plans and specifications prepared by The Vertex Companies for the contract price specified below, subject to additions and deductions according to the terms of the specifications.

B. This bid includes addenda numbered: (please indicate by checking the box of each addenda number)

No. 1 No. 2 No. 3 No. 4 No. 5 No. 6

C. The proposed contract price is:

_____ (total bid in words)

dollars (\$_____).

For Alternate No. 1: Add \$_____ Subtract \$_____

For Alternate No. 2: Add \$_____ Subtract \$_____

For Alternate No. 3: Add \$_____ Subtract \$_____

Name of General Bidder: _____

D. The undersigned agrees that, if it is selected as general contractor, it 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 50% payment bond from 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.

Bid Amount	Payment Bond Required	Performance Bond Required
Bid up to \$150,000	50% Payment Bond	No Performance Bond Required
Bid over \$150,000	100% Payment Bond	100% Performance Bond

The undersigned hereby certifies that it 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 it will comply fully with all laws and regulations applicable to awards made subject to section 39M of Chapter 30 of the General Laws.

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 any natural person, joint venture, 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 thereunder.

The undersigned further certifies under penalties of perjury that the undersigned is not debarred from doing public construction work under any law, rule or regulation of the federal government.

The undersigned hereby declares that the undersigned has carefully examined the Advertisement, Instructions to Bidders, Owner - Contractor Agreement, General Conditions of the Contract, Special Conditions (if any), Plans and Specifications, all other Contract Documents, and also the Site upon which the proposed work is to be performed. The undersigned further declares that in regard to the conditions affecting the work to be done and the labor and materials needed, this proposal is based solely on the undersigned's own investigation and research and not in reliance upon any representation of any employee, officer or agent of the Commonwealth.

The undersigned further certifies under the penalties of perjury that:

- 1) this bid is in all respects bona fide, fair and made without collusion or fraud with any other person;
- 2) we are the only persons interested in this proposal;
- 3) that it is made without any connection with any other person making any bid for the same work and without directly or indirectly influencing or attempting to influence any other person to bid to refrain from bidding or to influence the amount of the bid of any other person or corporation;
- 4) that no person acting for, or employed by, the Commonwealth of Massachusetts is directly or indirectly interested in this proposal, or in any contract which be made under it, or in expected profits to arise therefrom.

As used above the word "person" shall mean natural person, joint venture, partnership, corporation or other business or legal entity.

The undersigned certifies that it shall comply with the provisions of the Equal Employment Opportunity, Non-Discrimination, and Affirmative Action Program set forth in the General Conditions of the Contract.

Should the Contract Documents require submission of special data to accompany the bid, the Awarding Authority reserves the right to rule the bidder's failure to submit such data an informality and to receive said data subsequently within a reasonable time as set by the Awarding Authority.

Date _____, 2023.

(Name of General Bidder)

By _____
(Typed/Printed Name of Person & Title)

By _____
(Signed Name of Person)

(Business Address, City, State)

(Telephone Number)

(E-mail address)

The following information is furnished by the Bidder for the information of the Department of Mental Health.

Bidders Vendor Code / FEIN # _____

Is Bidder a corporation? ____ If so, incorporated in what state? _____

President _____

Secretary or Clerk _____

Treasurer _____

If Bidder is a foreign corporation, is it registered to do business in Massachusetts? _____

If Bidder is a foreign corporation and is selected, Bidder is required under M.G.L. c. 30, s. 39L to obtain from the Massachusetts Secretary of State, One Ashburton Place, 17th floor, a certificate stating that the corporation is registered to do business in Massachusetts, and to furnish said certificate to the awarding authority prior to the award.

Is Bidder a general partnership or joint venture? ____ If so, name each partner or venturer _____

Is Bidder a limited partnership? _____

Is Bidder registered in Massachusetts? ____ If so, name each general partner _____

If Bidder is a foreign limited partnership and is selected, Bidder is required under M.G.L. c. 30, s. 39L to obtain from the Massachusetts Secretary of State, One Ashburton Place, 17th floor, a certificate stating that the partnership is registered to do business in Massachusetts, and to furnish said certificate to the awarding authority prior to the award.

For each general partner or venturer that is a corporation, provide the following information (use additional sheets if necessary):

Name of corporation _____

State of incorporation _____

President _____

Secretary or Clerk _____

Treasurer _____

Name of corporation _____

State of incorporation _____

President _____

Secretary or Clerk _____

Treasurer _____

Is Bidder an individual? _____

Residence Address _____

Name under which Bidder does business _____

Business Address _____

If selected Bidder is an individual doing business under a different name then Bidder must furnish evidence of any required DBA filing.

BIDDER CHECKLIST

This is not a contract document. It is provided to help bidders avoid common mistakes that can result in the rejection of bids. It does not modify the Contract Documents.

*****Please note that all BID documents must be uploaded into COMMBUYS*****

To ensure that your bids are acceptable to the Department, and are not rejected due to errors or omissions, we are providing this Checklist for your convenience. It does not modify the Contract Documents.

- 1. Have you used the correct bid form provided in Attachment B ~~(and Attachment C if applicable)~~ to the Instructions to Bidders?
- 2. Have you properly identified the project, architect, etc., on your bid form?
- 3. Have you acknowledged receipt of the most current prevailing Wage Rates and/or Truck Rates which have been provided by the Awarding Authority? (Done by completing the bottom of Attachment A in this Part 1 packet.)
- 4. Are your bid amounts, as expressed in figures and words, consistent?
The amount expressed in words will control.
- 5. Have you acknowledged all addenda issued by placing the number of each addenda on the Bid Form and followed the instructions contained in each one?
- 6. If you are a General Bidder, have you responded to every alternate? ~~If you are a sub-bidder, have you responded to all of those alternates identified as applying to the filed sub-bid section you are bidding on?~~
- 7. If you are a general bidder ~~or a sub-bidder~~ affected by an alternate and an alternate price is requested and you estimate that there is no change in price, did you indicate by writing “no change”, “N/C”, or “0” ? Failure to provide a price, no change, N/C or 0 for an alternate by general bidders and sub-bidders when identified as part of a sub-bidders scope of work will result in rejection of your bid.
- 8. ~~If you are a sub-bidder and the alternate does not affect your category of work, have you left the alternate blank or written “N/A” and only “N/A”?~~
- 9. ~~If you are a sub-bidder and the bid documents request that you supply the name of the firm(s) that will do certain work identified as sub-subcontract paragraph E work, have you completed the Paragraph E section.~~
- 10. Have you added any information not called for, acknowledged an addendum that does not exist, or provided a price for an alternate not identified as part of your scope of work which can result in rejection of your bid?
- 11. Is your Bid Form **SIGNED** and dated?
- 12. **BID DEPOSITS**
 - a. **Have you uploaded your Bid Deposit onto COMMBUYS and FEDEXed your original bid bond to arrive prior to the bid opening date?**
 - b. Is your bid deposit, if in the form of a bid bond, issued from a bonding company licensed to do business in the Commonwealth of Massachusetts? **Is it signed by the contractor and the bonding company?**
 - c. Is your bid deposit made payable to the Commonwealth of Massachusetts? **Bid deposits made payable to any other entity may cause the bid to be rejected.**
 - d. Is your bid deposit five (5%) of the highest possible bid amount, considering all alternates being accepted in order?
- 13. If you are a General Contractor, have you included your current DCAMM Certificate of Eligibility and a completed, signed DCAMM Update Statement.
- 14. If you are a Sub-Contractor, have you included your current Certificate of Eligibility and a completed, signed DCAMM Update Statement?
- 15. Are all of your bid materials **uploaded into COMMBUYS** exactly as provided in the Instructions to Bidders?
- 16. Your bid **MUST** be **uploaded into COMMBUYS** prior to the deadline!

DOCUMENTS TO UPLOAD TO COMMBUYS CHECKLIST

- 1. **GENERAL BID FORM (PART 1 Attachment B)**
- 2. ~~SUB BID FORM (PART 1 Attachment C – NOT APPLICABLE)~~
- 3. **WAGE RATES ACKNOWLEDGEMENT (PART 1 ATTACHMENT A)**
(Complete the bottom of Attachment A in this Part 1 packet.)
- 4. **5% BID BOND**
- 5. ~~GENERAL CONTRACTOR – DCAMM UPDATE STATEMENT~~
- 6. ~~GENERAL CONTRACTOR – DCAMM CERTIFICATE OF ELIGIBILITY~~
- 7. ~~SUB CONTRACTOR – DCAMM UPDATE STATEMENT (NOT APPLICABLE)~~
- 8. ~~SUB CONTRACTOR – DCAMM CERTIFICATE OF ELIGIBILITY (NOT APPLICABLE)~~
- 9. ~~GENERAL CONTRACTOR – CHPT. 30 MassDOT PREQUALIFICATION STATEMENT (NOT APPLICABLE)~~



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: Department of Mental Health
Contract Number: 2023-072 **City/Town:** WESTBOROUGH
Description of Work: Subdivision of one office into two and installation of one (1) ductless multizone system, in accordance with the plans and project specifications of this project.
Job Location: 167 Lyman St. Westborough, MA 01581

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Construction						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	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>	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>	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>	12/01/2022	\$37.91	\$9.10	\$16.64	\$0.00	\$63.65
	06/01/2023	\$38.81	\$9.10	\$16.64	\$0.00	\$64.55
	12/01/2023	\$39.71	\$9.10	\$16.64	\$0.00	\$65.45
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2022	\$37.31	\$9.35	\$16.89	\$0.00	\$63.55
	06/01/2023	\$38.21	\$9.35	\$16.89	\$0.00	\$64.45
	12/01/2023	\$39.11	\$9.35	\$16.89	\$0.00	\$65.35
	06/01/2024	\$40.44	\$9.35	\$16.89	\$0.00	\$66.68
	12/01/2024	\$41.77	\$9.35	\$16.89	\$0.00	\$68.01
	06/01/2025	\$43.16	\$9.35	\$16.89	\$0.00	\$69.40
	12/01/2025	\$44.54	\$9.35	\$16.89	\$0.00	\$70.78
	06/01/2026	\$45.98	\$9.35	\$16.89	\$0.00	\$72.22
	12/01/2026	\$47.42	\$9.35	\$16.89	\$0.00	\$73.66
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASBESTOS WORKER (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (WORCESTER)</i>	12/01/2020	\$38.10	\$12.80	\$9.45	\$0.00	\$60.35
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2022	\$36.81	\$9.35	\$16.89	\$0.00	\$63.05
	06/01/2023	\$37.71	\$9.35	\$16.89	\$0.00	\$63.95
	12/01/2023	\$38.61	\$9.35	\$16.89	\$0.00	\$64.85
	06/01/2024	\$39.94	\$9.35	\$16.89	\$0.00	\$66.18
	12/01/2024	\$41.27	\$9.35	\$16.89	\$0.00	\$67.51
	06/01/2025	\$42.66	\$9.35	\$16.89	\$0.00	\$68.90
	12/01/2025	\$44.04	\$9.35	\$16.89	\$0.00	\$70.28
	06/01/2026	\$45.48	\$9.35	\$16.89	\$0.00	\$71.72
	12/01/2026	\$46.92	\$9.35	\$16.89	\$0.00	\$73.16
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$53.63	\$14.25	\$16.05	\$0.00	\$83.93
	06/01/2023	\$54.88	\$14.25	\$16.05	\$0.00	\$85.18
	12/01/2023	\$56.13	\$14.25	\$16.05	\$0.00	\$86.43
	06/01/2024	\$57.43	\$14.25	\$16.05	\$0.00	\$87.73
	12/01/2024	\$58.88	\$14.25	\$16.05	\$0.00	\$89.18
	06/01/2025	\$60.18	\$14.25	\$16.05	\$0.00	\$90.48
	12/01/2025	\$61.63	\$14.25	\$16.05	\$0.00	\$91.93
	06/01/2026	\$62.93	\$14.25	\$16.05	\$0.00	\$93.23
	12/01/2026	\$64.38	\$14.25	\$16.05	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$53.63	\$14.25	\$16.05	\$0.00	\$83.93
	06/01/2023	\$54.88	\$14.25	\$16.05	\$0.00	\$85.18
	12/01/2023	\$56.13	\$14.25	\$16.05	\$0.00	\$86.43
	06/01/2024	\$57.43	\$14.25	\$16.05	\$0.00	\$87.73
	12/01/2024	\$58.88	\$14.25	\$16.05	\$0.00	\$89.18
	06/01/2025	\$60.18	\$14.25	\$16.05	\$0.00	\$90.48
	12/01/2025	\$61.63	\$14.25	\$16.05	\$0.00	\$91.93
	06/01/2026	\$62.93	\$14.25	\$16.05	\$0.00	\$93.23
	12/01/2026	\$64.38	\$14.25	\$16.05	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	12/01/2022	\$37.91	\$9.10	\$16.64	\$0.00	\$63.65
	06/01/2023	\$38.81	\$9.10	\$16.64	\$0.00	\$64.55
	12/01/2023	\$39.71	\$9.10	\$16.64	\$0.00	\$65.45
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2022	\$37.31	\$9.35	\$16.89	\$0.00	\$63.55
	06/01/2023	\$38.21	\$9.35	\$16.89	\$0.00	\$64.45
	12/01/2023	\$39.11	\$9.35	\$16.89	\$0.00	\$65.35
	06/01/2024	\$40.44	\$9.35	\$16.89	\$0.00	\$66.68
	12/01/2024	\$41.77	\$9.35	\$16.89	\$0.00	\$68.01
	06/01/2025	\$43.16	\$9.35	\$16.89	\$0.00	\$69.40
	12/01/2025	\$44.54	\$9.35	\$16.89	\$0.00	\$70.78
	06/01/2026	\$45.98	\$9.35	\$16.89	\$0.00	\$72.22
	12/01/2026	\$47.42	\$9.35	\$16.89	\$0.00	\$73.66
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2022	\$46.37	\$7.07	\$20.03	\$0.00	\$73.47
	01/01/2023	\$47.12	\$7.07	\$20.31	\$0.00	\$74.50
	01/01/2024	\$48.12	\$7.07	\$20.60	\$0.00	\$75.79

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$30.14	\$7.07	\$13.04	\$0.00	\$50.25
2	65	\$30.14	\$7.07	\$13.04	\$0.00	\$50.25
3	70	\$32.46	\$7.07	\$14.03	\$0.00	\$53.56
4	75	\$34.78	\$7.07	\$15.03	\$0.00	\$56.88
5	80	\$37.10	\$7.07	\$16.03	\$0.00	\$60.20
6	85	\$39.41	\$7.07	\$17.04	\$0.00	\$63.52
7	90	\$41.73	\$7.07	\$18.03	\$0.00	\$66.83
8	95	\$44.05	\$7.07	\$19.05	\$0.00	\$70.17

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$30.63	\$7.07	\$13.22	\$0.00	\$50.92
2	65	\$30.63	\$7.07	\$13.22	\$0.00	\$50.92
3	70	\$32.98	\$7.07	\$14.23	\$0.00	\$54.28
4	75	\$35.34	\$7.07	\$15.24	\$0.00	\$57.65
5	80	\$37.70	\$7.07	\$16.25	\$0.00	\$61.02
6	85	\$40.05	\$7.07	\$17.28	\$0.00	\$64.40
7	90	\$42.41	\$7.07	\$18.28	\$0.00	\$67.76
8	95	\$44.76	\$7.07	\$19.32	\$0.00	\$71.15

Notes:

Apprentice to Journeyworker Ratio:1:4

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	08/01/2022	\$57.01	\$11.49	\$21.65	\$0.00	\$90.15
BRICKLAYERS LOCAL 3 (WORCESTER)	02/01/2023	\$58.21	\$11.49	\$21.65	\$0.00	\$91.35
	08/01/2023	\$60.26	\$11.49	\$21.65	\$0.00	\$93.40
	02/01/2024	\$61.51	\$11.49	\$21.65	\$0.00	\$94.65
	08/01/2024	\$63.61	\$11.49	\$21.65	\$0.00	\$96.75
	02/01/2025	\$64.91	\$11.49	\$21.65	\$0.00	\$98.05
	08/01/2025	\$67.06	\$11.49	\$21.65	\$0.00	\$100.20
	02/01/2026	\$68.41	\$11.49	\$21.65	\$0.00	\$101.55
	08/01/2026	\$70.61	\$11.49	\$21.65	\$0.00	\$103.75
	02/01/2027	\$72.01	\$11.49	\$21.65	\$0.00	\$105.15

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

Effective Date - 08/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.51	\$11.49	\$21.65	\$0.00	\$61.65
2	60	\$34.21	\$11.49	\$21.65	\$0.00	\$67.35
3	70	\$39.91	\$11.49	\$21.65	\$0.00	\$73.05
4	80	\$45.61	\$11.49	\$21.65	\$0.00	\$78.75
5	90	\$51.31	\$11.49	\$21.65	\$0.00	\$84.45

Effective Date - 02/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.11	\$11.49	\$21.65	\$0.00	\$62.25
2	60	\$34.93	\$11.49	\$21.65	\$0.00	\$68.07
3	70	\$40.75	\$11.49	\$21.65	\$0.00	\$73.89
4	80	\$46.57	\$11.49	\$21.65	\$0.00	\$79.71
5	90	\$52.39	\$11.49	\$21.65	\$0.00	\$85.53

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER OPERATING ENGINEERS LOCAL 4	12/01/2022	\$53.05	\$14.25	\$16.05	\$0.00	\$83.35
	06/01/2023	\$54.29	\$14.25	\$16.05	\$0.00	\$84.59
	12/01/2023	\$55.53	\$14.25	\$16.05	\$0.00	\$85.83
	06/01/2024	\$56.81	\$14.25	\$16.05	\$0.00	\$87.11
	12/01/2024	\$58.25	\$14.25	\$16.05	\$0.00	\$88.55
	06/01/2025	\$59.53	\$14.25	\$16.05	\$0.00	\$89.83
	12/01/2025	\$60.97	\$14.25	\$16.05	\$0.00	\$91.27
	06/01/2026	\$62.25	\$14.25	\$16.05	\$0.00	\$92.55
	12/01/2026	\$63.69	\$14.25	\$16.05	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

CAISSON & UNDERPINNING BOTTOM MAN LABORERS - FOUNDATION AND MARINE	12/01/2021	\$42.33	\$9.10	\$17.72	\$0.00	\$69.15
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For apprentice rates see "Apprentice- LABORER"

CAISSON & UNDERPINNING LABORER LABORERS - FOUNDATION AND MARINE	12/01/2021	\$41.18	\$9.10	\$17.72	\$0.00	\$68.00
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For apprentice rates see "Apprentice- LABORER"

CAISSON & UNDERPINNING TOP MAN LABORERS - FOUNDATION AND MARINE	12/01/2021	\$41.18	\$9.10	\$17.72	\$0.00	\$68.00
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For apprentice rates see "Apprentice- LABORER"

CARBIDE CORE DRILL OPERATOR LABORERS - ZONE 2	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95

For apprentice rates see "Apprentice- LABORER"

CARPENTER CARPENTERS -ZONE 2 (Eastern Massachusetts)	09/01/2022	\$45.18	\$8.68	\$19.97	\$0.00	\$73.83
	03/01/2023	\$45.78	\$8.68	\$19.97	\$0.00	\$74.43

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - CARPENTER - Zone 2 Eastern MA

Effective Date - 09/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.59	\$8.68	\$1.73	\$0.00	\$33.00
2	60	\$27.11	\$8.68	\$1.73	\$0.00	\$37.52
3	70	\$31.63	\$8.68	\$14.78	\$0.00	\$55.09
4	75	\$33.89	\$8.68	\$14.78	\$0.00	\$57.35
5	80	\$36.14	\$8.68	\$16.51	\$0.00	\$61.33
6	80	\$36.14	\$8.68	\$16.51	\$0.00	\$61.33
7	90	\$40.66	\$8.68	\$18.24	\$0.00	\$67.58
8	90	\$40.66	\$8.68	\$18.24	\$0.00	\$67.58

Effective Date - 03/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.89	\$8.68	\$1.73	\$0.00	\$33.30
2	60	\$27.47	\$8.68	\$1.73	\$0.00	\$37.88
3	70	\$32.05	\$8.68	\$14.78	\$0.00	\$55.51
4	75	\$34.34	\$8.68	\$14.78	\$0.00	\$57.80
5	80	\$36.62	\$8.68	\$16.51	\$0.00	\$61.81
6	80	\$36.62	\$8.68	\$16.51	\$0.00	\$61.81
7	90	\$41.20	\$8.68	\$18.24	\$0.00	\$68.12
8	90	\$41.20	\$8.68	\$18.24	\$0.00	\$68.12

Notes:
 % Indentured After 10/1/17; 45/45/55/55/70/70/80/80
 Step 1&2 \$31.01/ 3&4 \$48.64/ 5&6 \$57.24/ 7&8 \$63.54

Apprentice to Journeyworker Ratio:1:5

CARPENTER WOOD FRAME	04/01/2022	\$23.66	\$7.21	\$4.80	\$0.00	\$35.67
CARPENTERS-ZONE 3 (Wood Frame)	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 - 04/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$14.20	\$7.21	\$0.00	\$0.00	\$21.41
2	60	\$14.20	\$7.21	\$0.00	\$0.00	\$21.41
3	65	\$15.38	\$7.21	\$0.00	\$0.00	\$22.59
4	70	\$16.56	\$7.21	\$0.00	\$0.00	\$23.77
5	75	\$17.75	\$7.21	\$3.80	\$0.00	\$28.76
6	80	\$18.93	\$7.21	\$3.80	\$0.00	\$29.94
7	85	\$20.11	\$7.21	\$3.80	\$0.00	\$31.12
8	90	\$21.29	\$7.21	\$3.80	\$0.00	\$32.30

Effective Date - 04/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$14.50	\$7.21	\$0.00	\$0.00	\$21.71
2	60	\$14.50	\$7.21	\$0.00	\$0.00	\$21.71
3	65	\$15.70	\$7.21	\$0.00	\$0.00	\$22.91
4	70	\$16.91	\$7.21	\$0.00	\$0.00	\$24.12
5	75	\$18.12	\$7.21	\$3.80	\$0.00	\$29.13
6	80	\$19.33	\$7.21	\$3.80	\$0.00	\$30.34
7	85	\$20.54	\$7.21	\$3.80	\$0.00	\$31.55
8	90	\$21.74	\$7.21	\$3.80	\$0.00	\$32.75

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
 Step 1&2 \$17.86/ 3&4 \$20.22/ 5&6 \$27.57/ 7&8 \$29.94

Apprentice to Journeyworker Ratio:1:5

CEMENT MASONRY/PLASTERING BRICKLAYERS LOCAL 3 (WORCESTER)	01/01/2020	\$47.14	\$12.75	\$22.41	\$0.62	\$82.92
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Apprentice - CEMENT MASONRY/PLASTERING - Worcester

Effective Date - 01/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.57	\$12.75	\$15.41	\$0.00	\$51.73
2	60	\$28.28	\$12.75	\$17.41	\$0.62	\$59.06
3	65	\$30.64	\$12.75	\$18.41	\$0.62	\$62.42
4	70	\$33.00	\$12.75	\$19.41	\$0.62	\$65.78
5	75	\$35.36	\$12.75	\$20.41	\$0.62	\$69.14
6	80	\$37.71	\$12.75	\$21.41	\$0.62	\$72.49
7	90	\$42.43	\$12.75	\$22.41	\$0.62	\$78.21

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>	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$54.68	\$14.25	\$16.05	\$0.00	\$84.98
	06/01/2023	\$55.95	\$14.25	\$16.05	\$0.00	\$86.25
	12/01/2023	\$57.23	\$14.25	\$16.05	\$0.00	\$87.53
	06/01/2024	\$58.55	\$14.25	\$16.05	\$0.00	\$88.85
	12/01/2024	\$60.03	\$14.25	\$16.05	\$0.00	\$90.33
	06/01/2025	\$61.36	\$14.25	\$16.05	\$0.00	\$91.66
	12/01/2025	\$62.83	\$14.25	\$16.05	\$0.00	\$93.13
	06/01/2026	\$64.16	\$14.25	\$16.05	\$0.00	\$94.46
12/01/2026	\$65.64	\$14.25	\$16.05	\$0.00	\$95.94	
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$35.08	\$14.25	\$16.05	\$0.00	\$65.38
	06/01/2023	\$35.90	\$14.25	\$16.05	\$0.00	\$66.20
	12/01/2023	\$36.72	\$14.25	\$16.05	\$0.00	\$67.02
	06/01/2024	\$37.57	\$14.25	\$16.05	\$0.00	\$67.87
	12/01/2024	\$38.52	\$14.25	\$16.05	\$0.00	\$68.82
	06/01/2025	\$39.37	\$14.25	\$16.05	\$0.00	\$69.67
	12/01/2025	\$40.32	\$14.25	\$16.05	\$0.00	\$70.62
	06/01/2026	\$41.18	\$14.25	\$16.05	\$0.00	\$71.48
12/01/2026	\$42.13	\$14.25	\$16.05	\$0.00	\$72.43	
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2022	\$54.86	\$8.65	\$23.05	\$0.00	\$86.56
	01/01/2023	\$56.06	\$8.65	\$23.05	\$0.00	\$87.76
	07/01/2023	\$57.26	\$8.65	\$23.05	\$0.00	\$88.96
	01/01/2024	\$58.46	\$8.65	\$23.05	\$0.00	\$90.16
	07/01/2024	\$59.66	\$8.65	\$23.05	\$0.00	\$91.36
	01/01/2025	\$60.86	\$8.65	\$23.05	\$0.00	\$92.56

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.43	\$8.65	\$0.00	\$0.00	\$36.08
2	55	\$30.17	\$8.65	\$6.27	\$0.00	\$45.09
3	60	\$32.92	\$8.65	\$6.84	\$0.00	\$48.41
4	65	\$35.66	\$8.65	\$7.41	\$0.00	\$51.72
5	70	\$38.40	\$8.65	\$19.63	\$0.00	\$66.68
6	75	\$41.15	\$8.65	\$20.20	\$0.00	\$70.00
7	80	\$43.89	\$8.65	\$20.77	\$0.00	\$73.31
8	90	\$49.37	\$8.65	\$21.91	\$0.00	\$79.93

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.03	\$8.65	\$0.00	\$0.00	\$36.68
2	55	\$30.83	\$8.65	\$6.27	\$0.00	\$45.75
3	60	\$33.64	\$8.65	\$6.84	\$0.00	\$49.13
4	65	\$36.44	\$8.65	\$7.41	\$0.00	\$52.50
5	70	\$39.24	\$8.65	\$19.63	\$0.00	\$67.52
6	75	\$42.05	\$8.65	\$20.20	\$0.00	\$70.90
7	80	\$44.85	\$8.65	\$20.77	\$0.00	\$74.27
8	90	\$50.45	\$8.65	\$21.91	\$0.00	\$81.01

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

DEMO: ADZEMAN LABORERS - ZONE 2	12/01/2022	\$43.33	\$9.10	\$17.57	\$0.00	\$70.00
	06/01/2023	\$44.33	\$9.10	\$17.57	\$0.00	\$71.00
	12/01/2023	\$45.58	\$9.10	\$17.57	\$0.00	\$72.25

For apprentice rates see "Apprentice- LABORER"

DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 2	12/01/2022	\$44.33	\$9.10	\$17.57	\$0.00	\$71.00
	06/01/2023	\$45.33	\$9.10	\$17.57	\$0.00	\$72.00
	12/01/2023	\$46.58	\$9.10	\$17.57	\$0.00	\$73.25

For apprentice rates see "Apprentice- LABORER"

DEMO: BURNERS LABORERS - ZONE 2	12/01/2022	\$44.08	\$9.10	\$17.57	\$0.00	\$70.75
	06/01/2023	\$45.08	\$9.10	\$17.57	\$0.00	\$71.75
	12/01/2023	\$46.33	\$9.10	\$17.57	\$0.00	\$73.00

For apprentice rates see "Apprentice- LABORER"

DEMO: CONCRETE CUTTER/SAWYER LABORERS - ZONE 2	12/01/2022	\$44.33	\$9.10	\$17.57	\$0.00	\$71.00
	06/01/2023	\$45.33	\$9.10	\$17.57	\$0.00	\$72.00
	12/01/2023	\$46.58	\$9.10	\$17.57	\$0.00	\$73.25

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2022	\$44.08	\$9.10	\$17.57	\$0.00	\$70.75
	06/01/2023	\$45.08	\$9.10	\$17.57	\$0.00	\$71.75
	12/01/2023	\$46.33	\$9.10	\$17.57	\$0.00	\$73.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 2</i>	12/01/2022	\$43.33	\$9.10	\$17.57	\$0.00	\$70.00
	06/01/2023	\$44.33	\$9.10	\$17.57	\$0.00	\$71.00
	12/01/2023	\$45.58	\$9.10	\$17.57	\$0.00	\$72.25
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$53.05	\$14.25	\$16.05	\$0.00	\$83.35
	06/01/2023	\$54.29	\$14.25	\$16.05	\$0.00	\$84.59
	12/01/2023	\$55.53	\$14.25	\$16.05	\$0.00	\$85.83
	06/01/2024	\$56.81	\$14.25	\$16.05	\$0.00	\$87.11
	12/01/2024	\$58.25	\$14.25	\$16.05	\$0.00	\$88.55
	06/01/2025	\$59.53	\$14.25	\$16.05	\$0.00	\$89.83
	12/01/2025	\$60.97	\$14.25	\$16.05	\$0.00	\$91.27
	06/01/2026	\$62.25	\$14.25	\$16.05	\$0.00	\$92.55
	12/01/2026	\$63.69	\$14.25	\$16.05	\$0.00	\$93.99
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>	09/04/2022	\$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 - 09/04/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.24	\$12.20	\$0.55	\$0.00	\$30.99
2	43	\$19.60	\$12.20	\$0.59	\$0.00	\$32.39
3	48	\$21.88	\$12.20	\$14.18	\$0.00	\$48.26
4	55	\$25.07	\$12.20	\$14.63	\$0.00	\$51.90
5	65	\$29.63	\$12.20	\$15.27	\$0.00	\$57.10
6	80	\$36.47	\$12.20	\$16.22	\$0.00	\$64.89

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

Apprentice to Journeyworker Ratio:2:3***

ELEVATOR CONSTRUCTOR ELEVATOR CONSTRUCTORS LOCAL 41	01/01/2022	\$58.62	\$16.03	\$20.21	\$0.00	\$94.86
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Apprentice - ELEVATOR CONSTRUCTOR - Local 41

Effective Date - 01/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.31	\$16.03	\$0.00	\$0.00	\$45.34
2	55	\$32.24	\$16.03	\$20.21	\$0.00	\$68.48
3	65	\$38.10	\$16.03	\$20.21	\$0.00	\$74.34
4	70	\$41.03	\$16.03	\$20.21	\$0.00	\$77.27
5	80	\$46.90	\$16.03	\$20.21	\$0.00	\$83.14

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

Apprentice to Journeyworker Ratio:1:1

ELEVATOR CONSTRUCTOR HELPER ELEVATOR CONSTRUCTORS LOCAL 41	01/01/2022	\$41.03	\$16.03	\$20.21	\$0.00	\$77.27
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For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2022	\$36.81	\$9.35	\$16.89	\$0.00	\$63.05
	06/01/2023	\$37.71	\$9.35	\$16.89	\$0.00	\$63.95
	12/01/2023	\$38.61	\$9.35	\$16.89	\$0.00	\$64.85
	06/01/2024	\$39.94	\$9.35	\$16.89	\$0.00	\$66.18
	12/01/2024	\$41.27	\$9.35	\$16.89	\$0.00	\$67.51
	06/01/2025	\$42.66	\$9.35	\$16.89	\$0.00	\$68.90
	12/01/2025	\$44.04	\$9.35	\$16.89	\$0.00	\$70.28
	06/01/2026	\$45.48	\$9.35	\$16.89	\$0.00	\$71.72
	12/01/2026	\$46.92	\$9.35	\$16.89	\$0.00	\$73.16

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/05/2022	\$48.67	\$14.25	\$16.05	\$0.00	\$78.97
	05/01/2023	\$49.91	\$14.25	\$16.05	\$0.00	\$80.21
	11/01/2023	\$51.15	\$14.25	\$16.05	\$0.00	\$81.45
	05/01/2024	\$52.39	\$14.25	\$16.05	\$0.00	\$82.69
	11/01/2024	\$53.68	\$14.25	\$16.05	\$0.00	\$83.98
	05/01/2025	\$55.12	\$14.25	\$16.05	\$0.00	\$85.42
	11/01/2025	\$56.41	\$14.25	\$16.05	\$0.00	\$86.71
	05/01/2026	\$57.85	\$14.25	\$16.05	\$0.00	\$88.15
	11/01/2026	\$59.14	\$14.25	\$16.05	\$0.00	\$89.44
	05/01/2027	\$60.57	\$14.25	\$16.05	\$0.00	\$90.87
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2022	\$50.22	\$14.25	\$16.05	\$0.00	\$80.52
	05/01/2023	\$51.47	\$14.25	\$16.05	\$0.00	\$81.77
	11/01/2023	\$52.72	\$14.25	\$16.05	\$0.00	\$83.02
	05/01/2024	\$53.97	\$14.25	\$16.05	\$0.00	\$84.27
	11/01/2024	\$55.27	\$14.25	\$16.05	\$0.00	\$85.57
	05/01/2025	\$56.72	\$14.25	\$16.05	\$0.00	\$87.02
	11/01/2025	\$58.02	\$14.25	\$16.05	\$0.00	\$88.32
	05/01/2026	\$59.47	\$14.25	\$16.05	\$0.00	\$89.77
	11/01/2026	\$60.77	\$14.25	\$16.05	\$0.00	\$91.07
	05/01/2027	\$62.22	\$14.25	\$16.05	\$0.00	\$92.52
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2022	\$24.31	\$14.25	\$16.05	\$0.00	\$54.61
	05/01/2023	\$25.05	\$14.25	\$16.05	\$0.00	\$55.35
	11/01/2023	\$25.78	\$14.25	\$16.05	\$0.00	\$56.08
	05/01/2024	\$26.51	\$14.25	\$16.05	\$0.00	\$56.81
	11/01/2024	\$27.27	\$14.25	\$16.05	\$0.00	\$57.57
	05/01/2025	\$28.12	\$14.25	\$16.05	\$0.00	\$58.42
	11/01/2025	\$28.88	\$14.25	\$16.05	\$0.00	\$59.18
	05/01/2026	\$29.73	\$14.25	\$16.05	\$0.00	\$60.03
	11/01/2026	\$30.49	\$14.25	\$16.05	\$0.00	\$60.79
	05/01/2027	\$31.34	\$14.25	\$16.05	\$0.00	\$61.64
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 96</i>	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>	09/04/2022	\$45.59	\$12.20	\$17.50	\$0.00	\$75.29
For apprentice rates see "Apprentice- ELECTRICIAN"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$43.54	\$14.25	\$16.05	\$0.00	\$73.84
	06/01/2023	\$44.56	\$14.25	\$16.05	\$0.00	\$74.86
	12/01/2023	\$45.57	\$14.25	\$16.05	\$0.00	\$75.87
	06/01/2024	\$46.63	\$14.25	\$16.05	\$0.00	\$76.93
	12/01/2024	\$47.81	\$14.25	\$16.05	\$0.00	\$78.11
	06/01/2025	\$48.87	\$14.25	\$16.05	\$0.00	\$79.17
	12/01/2025	\$50.04	\$14.25	\$16.05	\$0.00	\$80.34
	06/01/2026	\$51.10	\$14.25	\$16.05	\$0.00	\$81.40
	12/01/2026	\$52.28	\$14.25	\$16.05	\$0.00	\$82.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2022	\$25.23	\$9.35	\$16.89	\$0.00	\$51.47
	06/01/2023	\$25.98	\$9.35	\$16.89	\$0.00	\$52.22
	12/01/2023	\$25.98	\$9.35	\$16.89	\$0.00	\$52.22
	06/01/2024	\$27.01	\$9.35	\$16.89	\$0.00	\$53.25
	12/01/2024	\$27.01	\$9.35	\$16.89	\$0.00	\$53.25
	06/01/2025	\$28.09	\$9.35	\$16.89	\$0.00	\$54.33
	12/01/2025	\$28.09	\$9.35	\$16.89	\$0.00	\$54.33
	06/01/2026	\$29.21	\$9.35	\$16.89	\$0.00	\$55.45
	12/01/2026	\$29.21	\$9.35	\$16.89	\$0.00	\$55.45
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE II</i>	03/01/2022	\$47.62	\$8.68	\$20.27	\$0.00	\$76.57

Apprentice - FLOORCOVERER - Local 2168 Zone II

Effective Date - 03/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.81	\$8.68	\$1.79	\$0.00	\$34.28
2	55	\$26.19	\$8.68	\$1.79	\$0.00	\$36.66
3	60	\$28.57	\$8.68	\$14.90	\$0.00	\$52.15
4	65	\$30.95	\$8.68	\$14.90	\$0.00	\$54.53
5	70	\$33.33	\$8.68	\$16.69	\$0.00	\$58.70
6	75	\$35.72	\$8.68	\$16.69	\$0.00	\$61.09
7	80	\$38.10	\$8.68	\$18.48	\$0.00	\$65.26
8	85	\$40.48	\$8.68	\$18.48	\$0.00	\$67.64

Notes: Steps are 750 hrs.
 % After 10/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)
 Step 1&2 \$31.90/ 3&4 \$38.39/ 5&6 \$58.70/ 7&8 \$65.26

Apprentice to Journeyworker Ratio:1:1

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$53.63	\$14.25	\$16.05	\$0.00	\$83.93
	06/01/2023	\$54.88	\$14.25	\$16.05	\$0.00	\$85.18
	12/01/2023	\$56.13	\$14.25	\$16.05	\$0.00	\$86.43
	06/01/2024	\$57.43	\$14.25	\$16.05	\$0.00	\$87.73
	12/01/2024	\$58.88	\$14.25	\$16.05	\$0.00	\$89.18
	06/01/2025	\$60.18	\$14.25	\$16.05	\$0.00	\$90.48
	12/01/2025	\$61.63	\$14.25	\$16.05	\$0.00	\$91.93
	06/01/2026	\$62.93	\$14.25	\$16.05	\$0.00	\$93.23
	12/01/2026	\$64.38	\$14.25	\$16.05	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$35.08	\$14.25	\$16.05	\$0.00	\$65.38
	06/01/2023	\$35.90	\$14.25	\$16.05	\$0.00	\$66.20
	12/01/2023	\$36.72	\$14.25	\$16.05	\$0.00	\$67.02
	06/01/2024	\$37.57	\$14.25	\$16.05	\$0.00	\$67.87
	12/01/2024	\$38.52	\$14.25	\$16.05	\$0.00	\$68.82
	06/01/2025	\$39.37	\$14.25	\$16.05	\$0.00	\$69.67
	12/01/2025	\$40.32	\$14.25	\$16.05	\$0.00	\$70.62
	06/01/2026	\$41.18	\$14.25	\$16.05	\$0.00	\$71.48
	12/01/2026	\$42.13	\$14.25	\$16.05	\$0.00	\$72.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	07/01/2022	\$44.36	\$8.65	\$23.05	\$0.00	\$76.06
	01/01/2023	\$45.56	\$8.65	\$23.05	\$0.00	\$77.26
	07/01/2023	\$46.76	\$8.65	\$23.05	\$0.00	\$78.46
	01/01/2024	\$47.96	\$8.65	\$23.05	\$0.00	\$79.66
	07/01/2024	\$49.16	\$8.65	\$23.05	\$0.00	\$80.86
	01/01/2025	\$50.36	\$8.65	\$23.05	\$0.00	\$82.06

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - GLAZIER - Local 35 Zone 2

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.18	\$8.65	\$0.00	\$0.00	\$30.83
2	55	\$24.40	\$8.65	\$6.27	\$0.00	\$39.32
3	60	\$26.62	\$8.65	\$6.84	\$0.00	\$42.11
4	65	\$28.83	\$8.65	\$7.41	\$0.00	\$44.89
5	70	\$31.05	\$8.65	\$19.63	\$0.00	\$59.33
6	75	\$33.27	\$8.65	\$20.20	\$0.00	\$62.12
7	80	\$35.49	\$8.65	\$20.77	\$0.00	\$64.91
8	90	\$39.92	\$8.65	\$21.91	\$0.00	\$70.48

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.78	\$8.65	\$0.00	\$0.00	\$31.43
2	55	\$25.06	\$8.65	\$6.27	\$0.00	\$39.98
3	60	\$27.34	\$8.65	\$6.84	\$0.00	\$42.83
4	65	\$29.61	\$8.65	\$7.41	\$0.00	\$45.67
5	70	\$31.89	\$8.65	\$19.63	\$0.00	\$60.17
6	75	\$34.17	\$8.65	\$20.20	\$0.00	\$63.02
7	80	\$36.45	\$8.65	\$20.77	\$0.00	\$65.87
8	90	\$41.00	\$8.65	\$21.91	\$0.00	\$71.56

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

HOISTING ENGINEER/CRANES/GRADALLS	12/01/2022	\$53.63	\$14.25	\$16.05	\$0.00	\$83.93
OPERATING ENGINEERS LOCAL 4	06/01/2023	\$54.88	\$14.25	\$16.05	\$0.00	\$85.18
	12/01/2023	\$56.13	\$14.25	\$16.05	\$0.00	\$86.43
	06/01/2024	\$57.43	\$14.25	\$16.05	\$0.00	\$87.73
	12/01/2024	\$58.88	\$14.25	\$16.05	\$0.00	\$89.18
	06/01/2025	\$60.18	\$14.25	\$16.05	\$0.00	\$90.48
	12/01/2025	\$61.63	\$14.25	\$16.05	\$0.00	\$91.93
	06/01/2026	\$62.93	\$14.25	\$16.05	\$0.00	\$93.23
	12/01/2026	\$64.38	\$14.25	\$16.05	\$0.00	\$94.68

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - OPERATING ENGINEERS - Local 4

Effective Date - 12/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$29.50	\$14.25	\$0.00	\$0.00	\$43.75
2	60	\$32.18	\$14.25	\$16.05	\$0.00	\$62.48
3	65	\$34.86	\$14.25	\$16.05	\$0.00	\$65.16
4	70	\$37.54	\$14.25	\$16.05	\$0.00	\$67.84
5	75	\$40.22	\$14.25	\$16.05	\$0.00	\$70.52
6	80	\$42.90	\$14.25	\$16.05	\$0.00	\$73.20
7	85	\$45.59	\$14.25	\$16.05	\$0.00	\$75.89
8	90	\$48.27	\$14.25	\$16.05	\$0.00	\$78.57

Effective Date - 06/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$30.18	\$14.25	\$0.00	\$0.00	\$44.43
2	60	\$32.93	\$14.25	\$16.05	\$0.00	\$63.23
3	65	\$35.67	\$14.25	\$16.05	\$0.00	\$65.97
4	70	\$38.42	\$14.25	\$16.05	\$0.00	\$68.72
5	75	\$41.16	\$14.25	\$16.05	\$0.00	\$71.46
6	80	\$43.90	\$14.25	\$16.05	\$0.00	\$74.20
7	85	\$46.65	\$14.25	\$16.05	\$0.00	\$76.95
8	90	\$49.39	\$14.25	\$16.05	\$0.00	\$79.69

Notes:

Apprentice to Journeyworker Ratio:1:6

HVAC (DUCTWORK) SHEETMETAL WORKERS LOCAL 63	07/01/2022	\$40.30	\$10.64	\$17.54	\$2.05	\$70.53
	01/01/2023	\$41.30	\$10.64	\$17.54	\$2.05	\$71.53
	07/01/2023	\$42.55	\$10.64	\$17.54	\$2.05	\$72.78
	01/01/2024	\$43.80	\$10.64	\$17.54	\$2.05	\$74.03
	07/01/2024	\$45.05	\$10.64	\$17.54	\$2.05	\$75.28
	01/01/2025	\$46.30	\$10.64	\$17.54	\$2.05	\$76.53

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS) ELECTRICIANS LOCAL 96	09/04/2022	\$45.59	\$12.20	\$17.50	\$0.00	\$75.29
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For apprentice rates see "Apprentice- ELECTRICIAN"

HVAC (TESTING AND BALANCING - AIR) SHEETMETAL WORKERS LOCAL 63	07/01/2022	\$40.30	\$10.64	\$17.54	\$2.05	\$70.53
	01/01/2023	\$41.30	\$10.64	\$17.54	\$2.05	\$71.53
	07/01/2023	\$42.55	\$10.64	\$17.54	\$2.05	\$72.78
	01/01/2024	\$43.80	\$10.64	\$17.54	\$2.05	\$74.03
	07/01/2024	\$45.05	\$10.64	\$17.54	\$2.05	\$75.28
	01/01/2025	\$46.30	\$10.64	\$17.54	\$2.05	\$76.53

For apprentice rates see "Apprentice- SHEET METAL WORKER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC (TESTING AND BALANCING -WATER) <i>PLUMBERS LOCAL 4</i>	09/01/2022	\$50.50	\$9.80	\$17.02	\$0.00	\$77.32
	03/01/2023	\$51.90	\$9.80	\$17.02	\$0.00	\$78.72
	09/01/2023	\$53.30	\$9.80	\$17.02	\$0.00	\$80.12
	03/01/2024	\$54.70	\$9.80	\$17.02	\$0.00	\$81.52
	09/01/2024	\$56.10	\$9.80	\$17.02	\$0.00	\$82.92
	03/01/2025	\$57.50	\$9.80	\$17.02	\$0.00	\$84.32
	09/01/2025	\$58.90	\$9.80	\$17.02	\$0.00	\$85.72
	03/01/2026	\$60.30	\$9.80	\$17.02	\$0.00	\$87.12
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PLUMBERS LOCAL 4</i>	09/01/2022	\$50.50	\$9.80	\$17.02	\$0.00	\$77.32
	03/01/2023	\$51.90	\$9.80	\$17.02	\$0.00	\$78.72
	09/01/2023	\$53.30	\$9.80	\$17.02	\$0.00	\$80.12
	03/01/2024	\$54.70	\$9.80	\$17.02	\$0.00	\$81.52
	09/01/2024	\$56.10	\$9.80	\$17.02	\$0.00	\$82.92
	03/01/2025	\$57.50	\$9.80	\$17.02	\$0.00	\$84.32
	09/01/2025	\$58.90	\$9.80	\$17.02	\$0.00	\$85.72
	03/01/2026	\$60.30	\$9.80	\$17.02	\$0.00	\$87.12
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 2</i>	12/01/2022	\$37.91	\$9.10	\$16.64	\$0.00	\$63.65
	06/01/2023	\$38.81	\$9.10	\$16.64	\$0.00	\$64.55
	12/01/2023	\$39.71	\$9.10	\$16.64	\$0.00	\$65.45
For apprentice rates see "Apprentice- LABORER"						
HYDRAULIC DRILLS (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2022	\$37.31	\$9.35	\$16.89	\$0.00	\$63.55
	06/01/2023	\$38.21	\$9.35	\$16.89	\$0.00	\$64.45
	12/01/2023	\$39.11	\$9.35	\$16.89	\$0.00	\$65.35
	06/01/2024	\$40.44	\$9.35	\$16.89	\$0.00	\$66.68
	12/01/2024	\$41.77	\$9.35	\$16.89	\$0.00	\$68.01
	06/01/2025	\$43.16	\$9.35	\$16.89	\$0.00	\$69.40
	12/01/2025	\$44.54	\$9.35	\$16.89	\$0.00	\$70.78
	06/01/2026	\$45.98	\$9.35	\$16.89	\$0.00	\$72.22
12/01/2026	\$47.42	\$9.35	\$16.89	\$0.00	\$73.66	
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
INSULATOR (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (WORCESTER)</i>	09/01/2022	\$48.95	\$13.80	\$17.14	\$0.00	\$79.89

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

Effective Date - 09/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.48	\$13.80	\$12.42	\$0.00	\$50.70
2	60	\$29.37	\$13.80	\$13.36	\$0.00	\$56.53
3	70	\$34.27	\$13.80	\$14.31	\$0.00	\$62.38
4	80	\$39.16	\$13.80	\$15.25	\$0.00	\$68.21

Notes:
Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (WORCESTER AREA)</i>	09/16/2022	\$51.29	\$8.25	\$26.70	\$0.00	\$86.24
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Apprentice - IRONWORKER - Local 7 Worcester

Effective Date - 09/16/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$30.77	\$8.25	\$26.70	\$0.00	\$65.72
2	70	\$35.90	\$8.25	\$26.70	\$0.00	\$70.85
3	75	\$38.47	\$8.25	\$26.70	\$0.00	\$73.42
4	80	\$41.03	\$8.25	\$26.70	\$0.00	\$75.98
5	85	\$43.60	\$8.25	\$26.70	\$0.00	\$78.55
6	90	\$46.16	\$8.25	\$26.70	\$0.00	\$81.11

Notes:

Apprentice to Journeyworker Ratio:1:4

JACKHAMMER & PAVING BREAKER OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95

For apprentice rates see "Apprentice- LABORER"

LABORER <i>LABORERS - ZONE 2</i>	12/01/2022	\$37.16	\$9.10	\$16.64	\$0.00	\$62.90
	06/01/2023	\$38.06	\$9.10	\$16.64	\$0.00	\$63.80
	12/01/2023	\$38.96	\$9.10	\$16.64	\$0.00	\$64.70

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - LABORER - Zone 2

Effective Date - 12/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.30	\$9.10	\$16.64	\$0.00	\$48.04
2	70	\$26.01	\$9.10	\$16.64	\$0.00	\$51.75
3	80	\$29.73	\$9.10	\$16.64	\$0.00	\$55.47
4	90	\$33.44	\$9.10	\$16.64	\$0.00	\$59.18

Effective Date - 06/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.84	\$9.10	\$16.64	\$0.00	\$48.58
2	70	\$26.64	\$9.10	\$16.64	\$0.00	\$52.38
3	80	\$30.45	\$9.10	\$16.64	\$0.00	\$56.19
4	90	\$34.25	\$9.10	\$16.64	\$0.00	\$59.99

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER (HEAVY & HIGHWAY)	12/01/2022	\$36.56	\$9.35	\$16.89	\$0.00	\$62.80
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2023	\$37.46	\$9.35	\$16.89	\$0.00	\$63.70
	12/01/2023	\$38.36	\$9.35	\$16.89	\$0.00	\$64.60
	06/01/2024	\$39.69	\$9.35	\$16.89	\$0.00	\$65.93
	12/01/2024	\$41.02	\$9.35	\$16.89	\$0.00	\$67.26
	06/01/2025	\$42.41	\$9.35	\$16.89	\$0.00	\$68.65
	12/01/2025	\$43.79	\$9.35	\$16.89	\$0.00	\$70.03
	06/01/2026	\$45.23	\$9.35	\$16.89	\$0.00	\$71.47
	12/01/2026	\$46.67	\$9.35	\$16.89	\$0.00	\$72.91

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - LABORER (Heavy & Highway) - Zone 2

Effective Date - 12/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$21.94	\$9.35	\$16.89	\$0.00	\$48.18
2	70	\$25.59	\$9.35	\$16.89	\$0.00	\$51.83
3	80	\$29.25	\$9.35	\$16.89	\$0.00	\$55.49
4	90	\$32.90	\$9.35	\$16.89	\$0.00	\$59.14

Effective Date - 06/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.48	\$9.35	\$16.89	\$0.00	\$48.72
2	70	\$26.22	\$9.35	\$16.89	\$0.00	\$52.46
3	80	\$29.97	\$9.35	\$16.89	\$0.00	\$56.21
4	90	\$33.71	\$9.35	\$16.89	\$0.00	\$59.95

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER: CARPENTER TENDER
LABORERS - ZONE 2

12/01/2022	\$37.16	\$9.10	\$16.64	\$0.00	\$62.90
06/01/2023	\$38.06	\$9.10	\$16.64	\$0.00	\$63.80
12/01/2023	\$38.96	\$9.10	\$16.64	\$0.00	\$64.70

For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER
LABORERS - ZONE 2

12/01/2022	\$37.16	\$9.10	\$16.64	\$0.00	\$62.90
06/01/2023	\$38.06	\$9.10	\$16.64	\$0.00	\$63.80
12/01/2023	\$38.96	\$9.10	\$16.64	\$0.00	\$64.70

For apprentice rates see "Apprentice- LABORER"

LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER
LABORERS - ZONE 2

12/01/2022	\$37.25	\$9.10	\$16.70	\$0.00	\$63.05
06/01/2023	\$38.15	\$9.10	\$16.70	\$0.00	\$63.95
12/01/2023	\$39.05	\$9.10	\$16.70	\$0.00	\$64.85

For apprentice rates see "Apprentice- LABORER"

LABORER: MASON TENDER
LABORERS - ZONE 2

12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95

For apprentice rates see "Apprentice- LABORER"

LABORER: MASON TENDER (HEAVY & HIGHWAY)
LABORERS - ZONE 2 (HEAVY & HIGHWAY)

12/01/2022	\$36.81	\$9.35	\$16.89	\$0.00	\$63.05
06/01/2023	\$37.71	\$9.35	\$16.89	\$0.00	\$63.95
12/01/2023	\$38.61	\$9.35	\$16.89	\$0.00	\$64.85
06/01/2024	\$39.94	\$9.35	\$16.89	\$0.00	\$66.18
12/01/2024	\$41.27	\$9.35	\$16.89	\$0.00	\$67.51
06/01/2025	\$42.66	\$9.35	\$16.89	\$0.00	\$68.90
12/01/2025	\$44.04	\$9.35	\$16.89	\$0.00	\$70.28
06/01/2026	\$45.48	\$9.35	\$16.89	\$0.00	\$71.72
12/01/2026	\$46.92	\$9.35	\$16.89	\$0.00	\$73.16

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 2</i>	12/01/2022	\$37.16	\$9.10	\$16.64	\$0.00	\$62.90
	06/01/2023	\$38.06	\$9.10	\$16.64	\$0.00	\$63.80
	12/01/2023	\$38.96	\$9.10	\$16.64	\$0.00	\$64.70
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 2</i>	12/01/2022	\$37.16	\$9.10	\$16.64	\$0.00	\$62.90
	06/01/2023	\$38.06	\$9.10	\$16.64	\$0.00	\$63.80
	12/01/2023	\$38.96	\$9.10	\$16.64	\$0.00	\$64.70
This classification applies to the removal of standing trees, and the trimming and removal of branches and limbs when related to public works construction or site clearance incidental to construction . For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2022	\$36.81	\$9.35	\$16.89	\$0.00	\$63.05
	06/01/2023	\$37.71	\$9.35	\$16.89	\$0.00	\$63.95
	12/01/2023	\$38.61	\$9.35	\$16.89	\$0.00	\$64.85
	06/01/2024	\$39.94	\$9.35	\$16.89	\$0.00	\$66.18
	12/01/2024	\$41.27	\$9.35	\$16.89	\$0.00	\$67.51
	06/01/2025	\$42.66	\$9.35	\$16.89	\$0.00	\$68.90
	12/01/2025	\$44.04	\$9.35	\$16.89	\$0.00	\$70.28
	06/01/2026	\$45.48	\$9.35	\$16.89	\$0.00	\$71.72
	12/01/2026	\$46.92	\$9.35	\$16.89	\$0.00	\$73.16
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2022	\$45.29	\$11.49	\$20.37	\$0.00	\$77.15
	02/01/2023	\$46.25	\$11.49	\$20.37	\$0.00	\$78.11
	08/01/2023	\$47.89	\$11.49	\$20.37	\$0.00	\$79.75
	02/01/2024	\$48.89	\$11.49	\$20.37	\$0.00	\$80.75
	08/01/2024	\$50.57	\$11.49	\$20.37	\$0.00	\$82.43
	02/01/2025	\$51.61	\$11.49	\$20.37	\$0.00	\$83.47
	08/01/2025	\$53.33	\$11.49	\$20.37	\$0.00	\$85.19
	02/01/2026	\$54.41	\$11.49	\$20.37	\$0.00	\$86.27
	08/01/2026	\$56.17	\$11.49	\$20.37	\$0.00	\$88.03
02/01/2027	\$57.29	\$11.49	\$20.37	\$0.00	\$89.15	

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

Effective Date - 08/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.65	\$11.49	\$20.37	\$0.00	\$54.51
2	60	\$27.17	\$11.49	\$20.37	\$0.00	\$59.03
3	70	\$31.70	\$11.49	\$20.37	\$0.00	\$63.56
4	80	\$36.23	\$11.49	\$20.37	\$0.00	\$68.09
5	90	\$40.76	\$11.49	\$20.37	\$0.00	\$72.62

Effective Date - 02/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.13	\$11.49	\$20.37	\$0.00	\$54.99
2	60	\$27.75	\$11.49	\$20.37	\$0.00	\$59.61
3	70	\$32.38	\$11.49	\$20.37	\$0.00	\$64.24
4	80	\$37.00	\$11.49	\$20.37	\$0.00	\$68.86
5	90	\$41.63	\$11.49	\$20.37	\$0.00	\$73.49

Notes:

Apprentice to Journeyworker Ratio:1:3

MARBLE MASONS, TILELAYERS & TERRAZZO MECH	08/01/2022	\$59.17	\$11.49	\$22.31	\$0.00	\$92.97
BRICKLAYERS LOCAL 3 - MARBLE & TILE	02/01/2023	\$60.37	\$11.49	\$22.31	\$0.00	\$94.17
	08/01/2023	\$62.42	\$11.49	\$22.31	\$0.00	\$96.22
	02/01/2024	\$63.67	\$11.49	\$22.31	\$0.00	\$97.47
	08/01/2024	\$65.77	\$11.49	\$22.31	\$0.00	\$99.57
	02/01/2025	\$67.07	\$11.49	\$22.31	\$0.00	\$100.87
	08/01/2025	\$69.22	\$11.49	\$22.31	\$0.00	\$103.02
	02/01/2026	\$70.57	\$11.49	\$22.31	\$0.00	\$104.37
	08/01/2026	\$72.77	\$11.49	\$22.31	\$0.00	\$106.57
	02/01/2027	\$74.17	\$11.49	\$22.31	\$0.00	\$107.97

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

Effective Date - 08/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.59	\$11.49	\$22.31	\$0.00	\$63.39
2	60	\$35.50	\$11.49	\$22.31	\$0.00	\$69.30
3	70	\$41.42	\$11.49	\$22.31	\$0.00	\$75.22
4	80	\$47.34	\$11.49	\$22.31	\$0.00	\$81.14
5	90	\$53.25	\$11.49	\$22.31	\$0.00	\$87.05

Effective Date - 02/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.19	\$11.49	\$22.31	\$0.00	\$63.99
2	60	\$36.22	\$11.49	\$22.31	\$0.00	\$70.02
3	70	\$42.26	\$11.49	\$22.31	\$0.00	\$76.06
4	80	\$48.30	\$11.49	\$22.31	\$0.00	\$82.10
5	90	\$54.33	\$11.49	\$22.31	\$0.00	\$88.13

Notes:

Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$53.05	\$14.25	\$16.05	\$0.00	\$83.35
	06/01/2023	\$54.29	\$14.25	\$16.05	\$0.00	\$84.59
	12/01/2023	\$55.53	\$14.25	\$16.05	\$0.00	\$85.83
	06/01/2024	\$56.81	\$14.25	\$16.05	\$0.00	\$87.11
	12/01/2024	\$58.25	\$14.25	\$16.05	\$0.00	\$88.55
	06/01/2025	\$59.53	\$14.25	\$16.05	\$0.00	\$89.83
	12/01/2025	\$60.97	\$14.25	\$16.05	\$0.00	\$91.27
	06/01/2026	\$62.25	\$14.25	\$16.05	\$0.00	\$92.55
	12/01/2026	\$63.69	\$14.25	\$16.05	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$53.05	\$14.25	\$16.05	\$0.00	\$83.35
	06/01/2023	\$54.29	\$14.25	\$16.05	\$0.00	\$84.59
	12/01/2023	\$55.53	\$14.25	\$16.05	\$0.00	\$85.83
	06/01/2024	\$56.81	\$14.25	\$16.05	\$0.00	\$87.11
	12/01/2024	\$58.25	\$14.25	\$16.05	\$0.00	\$88.55
	06/01/2025	\$59.53	\$14.25	\$16.05	\$0.00	\$89.83
	12/01/2025	\$60.97	\$14.25	\$16.05	\$0.00	\$91.27
	06/01/2026	\$62.25	\$14.25	\$16.05	\$0.00	\$92.55
	12/01/2026	\$63.69	\$14.25	\$16.05	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 2) <i>MILLWRIGHTS LOCAL 1121 - Zone 2</i>	01/03/2022	\$40.67	\$8.58	\$21.57	\$0.00	\$70.82
	01/02/2023	\$41.92	\$8.58	\$21.57	\$0.00	\$72.07

Apprentice - MILLWRIGHT - Local 1121 Zone 2

Effective Date - 01/03/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$22.37	\$8.58	\$5.72	\$0.00	\$36.67
2	65	\$26.44	\$8.58	\$17.93	\$0.00	\$52.95
3	75	\$30.50	\$8.58	\$18.98	\$0.00	\$58.06
4	85	\$34.57	\$8.58	\$20.01	\$0.00	\$63.16

Effective Date - 01/02/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$23.06	\$8.58	\$5.72	\$0.00	\$37.36
2	65	\$27.25	\$8.58	\$17.93	\$0.00	\$53.76
3	75	\$31.44	\$8.58	\$18.98	\$0.00	\$59.00
4	85	\$35.63	\$8.58	\$20.01	\$0.00	\$64.22

Notes: Step 1&2 Appr. indentured after 1/6/2020 receive no pension, but do receive annuity. (Step 1 \$5.72, Step 2 \$6.66)
Steps are 2,000 hours

Apprentice to Journeyworker Ratio:1:4

MORTAR MIXER <i>LABORERS - ZONE 2</i>	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95

For apprentice rates see "Apprentice- LABORER"

OILER (OTHER THAN TRUCK CRANES,GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$24.37	\$14.25	\$16.05	\$0.00	\$54.67
	06/01/2023	\$24.94	\$14.25	\$16.05	\$0.00	\$55.24
	12/01/2023	\$25.51	\$14.25	\$16.05	\$0.00	\$55.81
	06/01/2024	\$26.11	\$14.25	\$16.05	\$0.00	\$56.41
	12/01/2024	\$26.77	\$14.25	\$16.05	\$0.00	\$57.07
	06/01/2025	\$27.37	\$14.25	\$16.05	\$0.00	\$57.67
	12/01/2025	\$28.03	\$14.25	\$16.05	\$0.00	\$58.33
	06/01/2026	\$28.62	\$14.25	\$16.05	\$0.00	\$58.92
	12/01/2026	\$29.29	\$14.25	\$16.05	\$0.00	\$59.59

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OILER (TRUCK CRANES, GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$29.57	\$14.25	\$16.05	\$0.00	\$59.87
	06/01/2023	\$30.27	\$14.25	\$16.05	\$0.00	\$60.57
	12/01/2023	\$30.96	\$14.25	\$16.05	\$0.00	\$61.26
	06/01/2024	\$31.68	\$14.25	\$16.05	\$0.00	\$61.98
	12/01/2024	\$32.48	\$14.25	\$16.05	\$0.00	\$62.78
	06/01/2025	\$33.20	\$14.25	\$16.05	\$0.00	\$63.50
	12/01/2025	\$34.00	\$14.25	\$16.05	\$0.00	\$64.30
	06/01/2026	\$34.72	\$14.25	\$16.05	\$0.00	\$65.02
	12/01/2026	\$35.52	\$14.25	\$16.05	\$0.00	\$65.82

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
OTHER POWER DRIVEN EQUIPMENT - CLASS II <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$53.05	\$14.25	\$16.05	\$0.00	\$83.35
	06/01/2023	\$54.29	\$14.25	\$16.05	\$0.00	\$84.59
	12/01/2023	\$55.53	\$14.25	\$16.05	\$0.00	\$85.83
	06/01/2024	\$56.81	\$14.25	\$16.05	\$0.00	\$87.11
	12/01/2024	\$58.25	\$14.25	\$16.05	\$0.00	\$88.55
	06/01/2025	\$59.53	\$14.25	\$16.05	\$0.00	\$89.83
	12/01/2025	\$60.97	\$14.25	\$16.05	\$0.00	\$91.27
	06/01/2026	\$62.25	\$14.25	\$16.05	\$0.00	\$92.55
	12/01/2026	\$63.69	\$14.25	\$16.05	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PAINTER (BRIDGES/TANKS) <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2022	\$54.86	\$8.65	\$23.05	\$0.00	\$86.56
	01/01/2023	\$56.06	\$8.65	\$23.05	\$0.00	\$87.76
	07/01/2023	\$57.26	\$8.65	\$23.05	\$0.00	\$88.96
	01/01/2024	\$58.46	\$8.65	\$23.05	\$0.00	\$90.16
	07/01/2024	\$59.66	\$8.65	\$23.05	\$0.00	\$91.36
	01/01/2025	\$60.86	\$8.65	\$23.05	\$0.00	\$92.56

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.43	\$8.65	\$0.00	\$0.00	\$36.08
2	55	\$30.17	\$8.65	\$6.27	\$0.00	\$45.09
3	60	\$32.92	\$8.65	\$6.84	\$0.00	\$48.41
4	65	\$35.66	\$8.65	\$7.41	\$0.00	\$51.72
5	70	\$38.40	\$8.65	\$19.63	\$0.00	\$66.68
6	75	\$41.15	\$8.65	\$20.20	\$0.00	\$70.00
7	80	\$43.89	\$8.65	\$20.77	\$0.00	\$73.31
8	90	\$49.37	\$8.65	\$21.91	\$0.00	\$79.93

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.03	\$8.65	\$0.00	\$0.00	\$36.68
2	55	\$30.83	\$8.65	\$6.27	\$0.00	\$45.75
3	60	\$33.64	\$8.65	\$6.84	\$0.00	\$49.13
4	65	\$36.44	\$8.65	\$7.41	\$0.00	\$52.50
5	70	\$39.24	\$8.65	\$19.63	\$0.00	\$67.52
6	75	\$42.05	\$8.65	\$20.20	\$0.00	\$70.90
7	80	\$44.85	\$8.65	\$20.77	\$0.00	\$74.27
8	90	\$50.45	\$8.65	\$21.91	\$0.00	\$81.01

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PAINTER (SPRAY OR SANDBLAST, NEW) * * If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2022	\$45.76	\$8.65	\$23.05	\$0.00	\$77.46
	01/01/2023	\$46.96	\$8.65	\$23.05	\$0.00	\$78.66
	07/01/2023	\$48.16	\$8.65	\$23.05	\$0.00	\$79.86
	01/01/2024	\$49.36	\$8.65	\$23.05	\$0.00	\$81.06
	07/01/2024	\$50.56	\$8.65	\$23.05	\$0.00	\$82.26
	01/01/2025	\$51.76	\$8.65	\$23.05	\$0.00	\$83.46

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

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.88	\$8.65	\$0.00	\$0.00	\$31.53
2	55	\$25.17	\$8.65	\$6.27	\$0.00	\$40.09
3	60	\$27.46	\$8.65	\$6.84	\$0.00	\$42.95
4	65	\$29.74	\$8.65	\$7.41	\$0.00	\$45.80
5	70	\$32.03	\$8.65	\$19.63	\$0.00	\$60.31
6	75	\$34.32	\$8.65	\$20.20	\$0.00	\$63.17
7	80	\$36.61	\$8.65	\$20.77	\$0.00	\$66.03
8	90	\$41.18	\$8.65	\$21.91	\$0.00	\$71.74

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.48	\$8.65	\$0.00	\$0.00	\$32.13
2	55	\$25.83	\$8.65	\$6.27	\$0.00	\$40.75
3	60	\$28.18	\$8.65	\$6.84	\$0.00	\$43.67
4	65	\$30.52	\$8.65	\$7.41	\$0.00	\$46.58
5	70	\$32.87	\$8.65	\$19.63	\$0.00	\$61.15
6	75	\$35.22	\$8.65	\$20.20	\$0.00	\$64.07
7	80	\$37.57	\$8.65	\$20.77	\$0.00	\$66.99
8	90	\$42.26	\$8.65	\$21.91	\$0.00	\$72.82

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT) <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2022	\$43.82	\$8.65	\$23.05	\$0.00	\$75.52
	01/01/2023	\$45.02	\$8.65	\$23.05	\$0.00	\$76.72
	07/01/2023	\$46.22	\$8.65	\$23.05	\$0.00	\$77.92
	01/01/2024	\$47.42	\$8.65	\$23.05	\$0.00	\$79.12
	07/01/2024	\$48.62	\$8.65	\$23.05	\$0.00	\$80.32
	01/01/2025	\$49.82	\$8.65	\$23.05	\$0.00	\$81.52

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.91	\$8.65	\$0.00	\$0.00	\$30.56
2	55	\$24.10	\$8.65	\$6.27	\$0.00	\$39.02
3	60	\$26.29	\$8.65	\$6.84	\$0.00	\$41.78
4	65	\$28.48	\$8.65	\$7.41	\$0.00	\$44.54
5	70	\$30.67	\$8.65	\$19.63	\$0.00	\$58.95
6	75	\$32.87	\$8.65	\$20.20	\$0.00	\$61.72
7	80	\$35.06	\$8.65	\$20.77	\$0.00	\$64.48
8	90	\$39.44	\$8.65	\$21.91	\$0.00	\$70.00

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.51	\$8.65	\$0.00	\$0.00	\$31.16
2	55	\$24.76	\$8.65	\$6.27	\$0.00	\$39.68
3	60	\$27.01	\$8.65	\$6.84	\$0.00	\$42.50
4	65	\$29.26	\$8.65	\$7.41	\$0.00	\$45.32
5	70	\$31.51	\$8.65	\$19.63	\$0.00	\$59.79
6	75	\$33.77	\$8.65	\$20.20	\$0.00	\$62.62
7	80	\$36.02	\$8.65	\$20.77	\$0.00	\$65.44
8	90	\$40.52	\$8.65	\$21.91	\$0.00	\$71.08

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, NEW) *	07/01/2022	\$44.36	\$8.65	\$23.05	\$0.00	\$76.06
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	01/01/2023	\$45.56	\$8.65	\$23.05	\$0.00	\$77.26
	07/01/2023	\$46.76	\$8.65	\$23.05	\$0.00	\$78.46
	01/01/2024	\$47.96	\$8.65	\$23.05	\$0.00	\$79.66
	07/01/2024	\$49.16	\$8.65	\$23.05	\$0.00	\$80.86
	01/01/2025	\$50.36	\$8.65	\$23.05	\$0.00	\$82.06

Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.18	\$8.65	\$0.00	\$0.00	\$30.83
2	55	\$24.40	\$8.65	\$6.27	\$0.00	\$39.32
3	60	\$26.62	\$8.65	\$6.84	\$0.00	\$42.11
4	65	\$28.83	\$8.65	\$7.41	\$0.00	\$44.89
5	70	\$31.05	\$8.65	\$19.63	\$0.00	\$59.33
6	75	\$33.27	\$8.65	\$20.20	\$0.00	\$62.12
7	80	\$35.49	\$8.65	\$20.77	\$0.00	\$64.91
8	90	\$39.92	\$8.65	\$21.91	\$0.00	\$70.48

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.78	\$8.65	\$0.00	\$0.00	\$31.43
2	55	\$25.06	\$8.65	\$6.27	\$0.00	\$39.98
3	60	\$27.34	\$8.65	\$6.84	\$0.00	\$42.83
4	65	\$29.61	\$8.65	\$7.41	\$0.00	\$45.67
5	70	\$31.89	\$8.65	\$19.63	\$0.00	\$60.17
6	75	\$34.17	\$8.65	\$20.20	\$0.00	\$63.02
7	80	\$36.45	\$8.65	\$20.77	\$0.00	\$65.87
8	90	\$41.00	\$8.65	\$21.91	\$0.00	\$71.56

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)	07/01/2022	\$42.42	\$8.65	\$23.05	\$0.00	\$74.12
PAINTERS LOCAL 35 - ZONE 2	01/01/2023	\$43.62	\$8.65	\$23.05	\$0.00	\$75.32
	07/01/2023	\$44.82	\$8.65	\$23.05	\$0.00	\$76.52
	01/01/2024	\$46.02	\$8.65	\$23.05	\$0.00	\$77.72
	07/01/2024	\$47.22	\$8.65	\$23.05	\$0.00	\$78.92
	01/01/2025	\$48.42	\$8.65	\$23.05	\$0.00	\$80.12

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.21	\$8.65	\$0.00	\$0.00	\$29.86
2	55	\$23.33	\$8.65	\$6.27	\$0.00	\$38.25
3	60	\$25.45	\$8.65	\$6.84	\$0.00	\$40.94
4	65	\$27.57	\$8.65	\$7.41	\$0.00	\$43.63
5	70	\$29.69	\$8.65	\$19.63	\$0.00	\$57.97
6	75	\$31.82	\$8.65	\$20.20	\$0.00	\$60.67
7	80	\$33.94	\$8.65	\$20.77	\$0.00	\$63.36
8	90	\$38.18	\$8.65	\$21.91	\$0.00	\$68.74

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.81	\$8.65	\$0.00	\$0.00	\$30.46
2	55	\$23.99	\$8.65	\$6.27	\$0.00	\$38.91
3	60	\$26.17	\$8.65	\$6.84	\$0.00	\$41.66
4	65	\$28.35	\$8.65	\$7.41	\$0.00	\$44.41
5	70	\$30.53	\$8.65	\$19.63	\$0.00	\$58.81
6	75	\$32.72	\$8.65	\$20.20	\$0.00	\$61.57
7	80	\$34.90	\$8.65	\$20.77	\$0.00	\$64.32
8	90	\$39.26	\$8.65	\$21.91	\$0.00	\$69.82

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY)	12/01/2022	\$36.56	\$9.35	\$16.89	\$0.00	\$62.80
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2023	\$37.46	\$9.35	\$16.89	\$0.00	\$63.70
	12/01/2023	\$38.36	\$9.35	\$16.89	\$0.00	\$64.60
	06/01/2024	\$39.69	\$9.35	\$16.89	\$0.00	\$65.93
	12/01/2024	\$41.02	\$9.35	\$16.89	\$0.00	\$67.26
	06/01/2025	\$42.41	\$9.35	\$16.89	\$0.00	\$68.65
	12/01/2025	\$43.79	\$9.35	\$16.89	\$0.00	\$70.03
	06/01/2026	\$45.23	\$9.35	\$16.89	\$0.00	\$71.47
	12/01/2026	\$46.67	\$9.35	\$16.89	\$0.00	\$72.91

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

PANEL & PICKUP TRUCKS DRIVER	12/01/2021	\$35.78	\$13.41	\$16.01	\$0.00	\$65.20
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B						

PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK)	08/01/2020	\$46.11	\$9.40	\$23.12	\$0.00	\$78.63
PILE DRIVER LOCAL 56 (ZONE 2)						

For apprentice rates see "Apprentice- PILE DRIVER"

PILE DRIVER	08/01/2020	\$46.11	\$9.40	\$23.12	\$0.00	\$78.63
PILE DRIVER LOCAL 56 (ZONE 2)						

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>	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95

For apprentice rates see "Apprentice- LABORER"

PIPELAYER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2022	\$36.81	\$9.35	\$16.89	\$0.00	\$63.05
	06/01/2023	\$37.71	\$9.35	\$16.89	\$0.00	\$63.95
	12/01/2023	\$38.61	\$9.35	\$16.89	\$0.00	\$64.85
	06/01/2024	\$39.94	\$9.35	\$16.89	\$0.00	\$66.18
	12/01/2024	\$41.27	\$9.35	\$16.89	\$0.00	\$67.51
	06/01/2025	\$42.66	\$9.35	\$16.89	\$0.00	\$68.90
	12/01/2025	\$44.04	\$9.35	\$16.89	\$0.00	\$70.28
	06/01/2026	\$45.48	\$9.35	\$16.89	\$0.00	\$71.72
	12/01/2026	\$46.92	\$9.35	\$16.89	\$0.00	\$73.16

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

PLUMBER & PIPEFITTER <i>PLUMBERS LOCAL 4</i>	09/01/2022	\$50.50	\$9.80	\$17.02	\$0.00	\$77.32
	03/01/2023	\$51.90	\$9.80	\$17.02	\$0.00	\$78.72
	09/01/2023	\$53.30	\$9.80	\$17.02	\$0.00	\$80.12
	03/01/2024	\$54.70	\$9.80	\$17.02	\$0.00	\$81.52
	09/01/2024	\$56.10	\$9.80	\$17.02	\$0.00	\$82.92
	03/01/2025	\$57.50	\$9.80	\$17.02	\$0.00	\$84.32
	09/01/2025	\$58.90	\$9.80	\$17.02	\$0.00	\$85.72
	03/01/2026	\$60.30	\$9.80	\$17.02	\$0.00	\$87.12

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PLUMBER/PIPEFITTER - Local 4

Effective Date - 09/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$20.20	\$9.80	\$0.00	\$0.00	\$30.00
2	50	\$25.25	\$9.80	\$0.00	\$0.00	\$35.05
3	60	\$30.30	\$9.80	\$0.00	\$0.00	\$40.10
4	70	\$35.35	\$9.80	\$7.31	\$0.00	\$52.46
5	80	\$40.40	\$9.80	\$7.31	\$0.00	\$57.51

Effective Date - 03/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$20.76	\$0.00	\$0.00	\$0.00	\$20.76
2	50	\$25.95	\$0.00	\$0.00	\$0.00	\$25.95
3	60	\$31.14	\$0.00	\$0.00	\$0.00	\$31.14
4	70	\$36.33	\$0.00	\$7.31	\$0.00	\$43.64
5	80	\$41.52	\$0.00	\$7.31	\$0.00	\$48.83

Notes:

Steps - 2000 hrs; Step 4 w/lic 75%, Step 5 w/lic 85%
Step 4 w/lic \$52.59, Step 5 w/lic \$57.44

Apprentice to Journeyworker Ratio:1:3

PNEUMATIC CONTROLS (TEMP.) <i>PLUMBERS LOCAL 4</i>	09/01/2022	\$50.50	\$9.80	\$17.02	\$0.00	\$77.32
	03/01/2023	\$51.90	\$9.80	\$17.02	\$0.00	\$78.72
	09/01/2023	\$53.30	\$9.80	\$17.02	\$0.00	\$80.12
	03/01/2024	\$54.70	\$9.80	\$17.02	\$0.00	\$81.52
	09/01/2024	\$56.10	\$9.80	\$17.02	\$0.00	\$82.92
	03/01/2025	\$57.50	\$9.80	\$17.02	\$0.00	\$84.32
	09/01/2025	\$58.90	\$9.80	\$17.02	\$0.00	\$85.72
	03/01/2026	\$60.30	\$9.80	\$17.02	\$0.00	\$87.12

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

PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95

For apprentice rates see "Apprentice- LABORER"

PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2022	\$36.81	\$9.35	\$16.89	\$0.00	\$63.05
	06/01/2023	\$37.71	\$9.35	\$16.89	\$0.00	\$63.95
	12/01/2023	\$38.61	\$9.35	\$16.89	\$0.00	\$64.85
	06/01/2024	\$39.94	\$9.35	\$16.89	\$0.00	\$66.18
	12/01/2024	\$41.27	\$9.35	\$16.89	\$0.00	\$67.51
	06/01/2025	\$42.66	\$9.35	\$16.89	\$0.00	\$68.90
	12/01/2025	\$44.04	\$9.35	\$16.89	\$0.00	\$70.28
	06/01/2026	\$45.48	\$9.35	\$16.89	\$0.00	\$71.72
	12/01/2026	\$46.92	\$9.35	\$16.89	\$0.00	\$73.16

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	12/01/2022	\$38.16	\$9.10	\$16.64	\$0.00	\$63.90
	06/01/2023	\$39.06	\$9.10	\$16.64	\$0.00	\$64.80
	12/01/2023	\$39.96	\$9.10	\$16.64	\$0.00	\$65.70
For apprentice rates see "Apprentice- LABORER"						
POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2022	\$37.56	\$9.35	\$16.89	\$0.00	\$63.80
	06/01/2023	\$38.46	\$9.35	\$16.89	\$0.00	\$64.70
	12/01/2023	\$39.36	\$9.35	\$16.89	\$0.00	\$65.60
	06/01/2024	\$40.69	\$9.35	\$16.89	\$0.00	\$66.93
	12/01/2024	\$42.02	\$9.35	\$16.89	\$0.00	\$68.26
	06/01/2025	\$43.41	\$9.35	\$16.89	\$0.00	\$69.65
	12/01/2025	\$44.79	\$9.35	\$16.89	\$0.00	\$71.03
	06/01/2026	\$46.23	\$9.35	\$16.89	\$0.00	\$72.47
12/01/2026	\$47.67	\$9.35	\$16.89	\$0.00	\$73.91	
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$53.63	\$14.25	\$16.05	\$0.00	\$83.93
	06/01/2023	\$54.88	\$14.25	\$16.05	\$0.00	\$85.18
	12/01/2023	\$56.13	\$14.25	\$16.05	\$0.00	\$86.43
	06/01/2024	\$57.43	\$14.25	\$16.05	\$0.00	\$87.73
	12/01/2024	\$58.88	\$14.25	\$16.05	\$0.00	\$89.18
	06/01/2025	\$60.18	\$14.25	\$16.05	\$0.00	\$90.48
	12/01/2025	\$61.63	\$14.25	\$16.05	\$0.00	\$91.93
	06/01/2026	\$62.93	\$14.25	\$16.05	\$0.00	\$93.23
12/01/2026	\$64.38	\$14.25	\$16.05	\$0.00	\$94.68	
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$53.63	\$14.25	\$16.05	\$0.00	\$83.93
	06/01/2023	\$54.88	\$14.25	\$16.05	\$0.00	\$85.18
	12/01/2023	\$56.13	\$14.25	\$16.05	\$0.00	\$86.43
	06/01/2024	\$57.43	\$14.25	\$16.05	\$0.00	\$87.73
	12/01/2024	\$58.88	\$14.25	\$16.05	\$0.00	\$89.18
	06/01/2025	\$60.18	\$14.25	\$16.05	\$0.00	\$90.48
	12/01/2025	\$61.63	\$14.25	\$16.05	\$0.00	\$91.93
	06/01/2026	\$62.93	\$14.25	\$16.05	\$0.00	\$93.23
12/01/2026	\$64.38	\$14.25	\$16.05	\$0.00	\$94.68	
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$35.08	\$14.25	\$16.05	\$0.00	\$65.38
	06/01/2023	\$35.90	\$14.25	\$16.05	\$0.00	\$66.20
	12/01/2023	\$36.72	\$14.25	\$16.05	\$0.00	\$67.02
	06/01/2024	\$37.57	\$14.25	\$16.05	\$0.00	\$67.87
	12/01/2024	\$38.52	\$14.25	\$16.05	\$0.00	\$68.82
	06/01/2025	\$39.37	\$14.25	\$16.05	\$0.00	\$69.67
	12/01/2025	\$40.32	\$14.25	\$16.05	\$0.00	\$70.62
	06/01/2026	\$41.18	\$14.25	\$16.05	\$0.00	\$71.48
12/01/2026	\$42.13	\$14.25	\$16.05	\$0.00	\$72.43	
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 170 - Dauphinis (Bellingham)</i>	12/01/2022	\$26.40	\$10.26	\$4.75	\$0.00	\$41.41
	01/01/2023	\$26.40	\$10.26	\$4.75	\$0.00	\$41.41
	12/01/2023	\$27.00	\$10.76	\$5.45	\$0.00	\$43.21
	01/01/2024	\$27.00	\$10.76	\$5.45	\$0.00	\$43.21
	12/01/2024	\$27.60	\$11.26	\$6.15	\$0.00	\$45.01
	01/01/2025	\$27.60	\$11.26	\$6.15	\$0.00	\$45.01
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$53.05	\$14.25	\$16.05	\$0.00	\$83.35
	06/01/2023	\$54.29	\$14.25	\$16.05	\$0.00	\$84.59
	12/01/2023	\$55.53	\$14.25	\$16.05	\$0.00	\$85.83
	06/01/2024	\$56.81	\$14.25	\$16.05	\$0.00	\$87.11
	12/01/2024	\$58.25	\$14.25	\$16.05	\$0.00	\$88.55
	06/01/2025	\$59.53	\$14.25	\$16.05	\$0.00	\$89.83
	12/01/2025	\$60.97	\$14.25	\$16.05	\$0.00	\$91.27
	06/01/2026	\$62.25	\$14.25	\$16.05	\$0.00	\$92.55
	12/01/2026	\$63.69	\$14.25	\$16.05	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$53.05	\$14.25	\$16.05	\$0.00	\$83.35
	06/01/2023	\$54.29	\$14.25	\$16.05	\$0.00	\$84.59
	12/01/2023	\$55.53	\$14.25	\$16.05	\$0.00	\$85.83
	06/01/2024	\$56.81	\$14.25	\$16.05	\$0.00	\$87.11
	12/01/2024	\$58.25	\$14.25	\$16.05	\$0.00	\$88.55
	06/01/2025	\$59.53	\$14.25	\$16.05	\$0.00	\$89.83
	12/01/2025	\$60.97	\$14.25	\$16.05	\$0.00	\$91.27
	06/01/2026	\$62.25	\$14.25	\$16.05	\$0.00	\$92.55
	12/01/2026	\$63.69	\$14.25	\$16.05	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROOFER (Inc.Roofer Waterproofing &Roofer Damproofg) <i>ROOFERS LOCAL 33</i>	08/01/2022	\$48.53	\$12.28	\$19.45	\$0.00	\$80.26
	02/01/2023	\$49.78	\$12.28	\$19.45	\$0.00	\$81.51
	08/01/2023	\$51.28	\$12.28	\$19.45	\$0.00	\$83.01
	02/01/2024	\$52.53	\$12.28	\$19.45	\$0.00	\$84.26
	08/01/2024	\$54.03	\$12.28	\$19.45	\$0.00	\$85.76
	02/01/2025	\$55.28	\$12.28	\$19.45	\$0.00	\$87.01
	08/01/2025	\$56.78	\$12.28	\$19.45	\$0.00	\$88.51
	02/01/2026	\$58.03	\$12.28	\$19.45	\$0.00	\$89.76

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - ROOFER - Local 33

Effective Date - 08/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.27	\$12.28	\$5.21	\$0.00	\$41.76
2	60	\$29.12	\$12.28	\$19.45	\$0.00	\$60.85
3	65	\$31.54	\$12.28	\$19.45	\$0.00	\$63.27
4	75	\$36.40	\$12.28	\$19.45	\$0.00	\$68.13
5	85	\$41.25	\$12.28	\$19.45	\$0.00	\$72.98

Effective Date - 02/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.89	\$12.28	\$5.21	\$0.00	\$42.38
2	60	\$29.87	\$12.28	\$19.45	\$0.00	\$61.60
3	65	\$32.36	\$12.28	\$19.45	\$0.00	\$64.09
4	75	\$37.34	\$12.28	\$19.45	\$0.00	\$69.07
5	85	\$42.31	\$12.28	\$19.45	\$0.00	\$74.04

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	08/01/2022	\$48.78	\$12.28	\$19.45	\$0.00	\$80.51
ROOFERS LOCAL 33	02/01/2023	\$50.03	\$12.28	\$19.45	\$0.00	\$81.76
	08/01/2023	\$51.53	\$12.28	\$19.45	\$0.00	\$83.26
	02/01/2024	\$52.78	\$12.28	\$19.45	\$0.00	\$84.51
	08/01/2024	\$54.28	\$12.28	\$19.45	\$0.00	\$86.01
	02/01/2025	\$55.53	\$12.28	\$19.45	\$0.00	\$87.26
	08/01/2025	\$57.03	\$12.28	\$19.45	\$0.00	\$88.76
	02/01/2026	\$58.28	\$12.28	\$19.45	\$0.00	\$90.01

For apprentice rates see "Apprentice- ROOFER"

SHEETMETAL WORKER	07/01/2022	\$40.30	\$10.64	\$17.54	\$2.05	\$70.53
SHEETMETAL WORKERS LOCAL 63	01/01/2023	\$41.30	\$10.64	\$17.54	\$2.05	\$71.53
	07/01/2023	\$42.55	\$10.64	\$17.54	\$2.05	\$72.78
	01/01/2024	\$43.80	\$10.64	\$17.54	\$2.05	\$74.03
	07/01/2024	\$45.05	\$10.64	\$17.54	\$2.05	\$75.28
	01/01/2025	\$46.30	\$10.64	\$17.54	\$2.05	\$76.53

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SHEET METAL WORKER - Local 63

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$18.14	\$4.79	\$4.76	\$0.92	\$28.61
2	50	\$20.15	\$5.32	\$5.29	\$1.03	\$31.79
3	55	\$22.17	\$5.85	\$5.82	\$1.13	\$34.97
4	60	\$24.18	\$6.38	\$6.35	\$1.23	\$38.14
5	65	\$26.20	\$6.92	\$6.88	\$1.33	\$41.33
6	70	\$28.21	\$7.45	\$7.41	\$1.44	\$44.51
7	75	\$30.23	\$7.98	\$7.94	\$1.54	\$47.69
8	80	\$32.24	\$8.51	\$15.42	\$1.64	\$57.81
9	85	\$34.26	\$9.04	\$15.95	\$1.74	\$60.99
10	90	\$36.27	\$9.58	\$16.48	\$1.85	\$64.18

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$18.59	\$4.79	\$4.76	\$0.92	\$29.06
2	50	\$20.65	\$5.32	\$5.29	\$1.03	\$32.29
3	55	\$22.72	\$5.85	\$5.82	\$1.13	\$35.52
4	60	\$24.78	\$6.38	\$6.35	\$1.23	\$38.74
5	65	\$26.85	\$6.92	\$6.88	\$1.33	\$41.98
6	70	\$28.91	\$7.45	\$7.41	\$1.44	\$45.21
7	75	\$30.98	\$7.98	\$7.94	\$1.54	\$48.44
8	80	\$33.04	\$8.51	\$15.42	\$1.64	\$58.61
9	85	\$35.11	\$9.04	\$15.95	\$1.74	\$61.84
10	90	\$37.17	\$9.58	\$16.48	\$1.85	\$65.08

Notes:

Apprentice to Journeyworker Ratio:1:3

SPECIALIZED EARTH MOVING EQUIP < 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	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>	12/01/2021	\$36.53	\$13.41	\$16.01	\$0.00	\$65.95
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 550 - (Section A) Zone 1</i>	10/01/2022	\$65.56	\$15.50	\$22.10	\$0.00	\$103.16
	03/01/2023	\$67.26	\$15.50	\$22.10	\$0.00	\$104.86
	10/01/2023	\$69.01	\$15.50	\$22.10	\$0.00	\$106.61
	03/01/2024	\$70.81	\$15.50	\$22.10	\$0.00	\$108.41
	10/01/2024	\$72.61	\$15.50	\$22.10	\$0.00	\$110.21
	03/01/2025	\$74.41	\$15.50	\$22.10	\$0.00	\$112.01

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SPRINKLER FITTER - Local 550 (Section A) Zone 1

Effective Date - 10/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$22.95	\$15.50	\$9.60	\$0.00	\$48.05
2	40	\$26.22	\$15.50	\$9.60	\$0.00	\$51.32
3	45	\$29.50	\$15.50	\$9.60	\$0.00	\$54.60
4	50	\$32.78	\$15.50	\$9.60	\$0.00	\$57.88
5	55	\$36.06	\$15.50	\$9.60	\$0.00	\$61.16
6	60	\$39.34	\$15.50	\$11.10	\$0.00	\$65.94
7	65	\$42.61	\$15.50	\$11.10	\$0.00	\$69.21
8	70	\$45.89	\$15.50	\$11.10	\$0.00	\$72.49
9	75	\$49.17	\$15.50	\$11.10	\$0.00	\$75.77
10	80	\$52.45	\$15.50	\$11.10	\$0.00	\$79.05

Effective Date - 03/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$23.54	\$15.50	\$9.60	\$0.00	\$48.64
2	40	\$26.90	\$15.50	\$9.60	\$0.00	\$52.00
3	45	\$30.27	\$15.50	\$9.60	\$0.00	\$55.37
4	50	\$33.63	\$15.50	\$9.60	\$0.00	\$58.73
5	55	\$36.99	\$15.50	\$9.60	\$0.00	\$62.09
6	60	\$40.36	\$15.50	\$11.10	\$0.00	\$66.96
7	65	\$43.72	\$15.50	\$11.10	\$0.00	\$70.32
8	70	\$47.08	\$15.50	\$11.10	\$0.00	\$73.68
9	75	\$50.45	\$15.50	\$11.10	\$0.00	\$77.05
10	80	\$53.81	\$15.50	\$11.10	\$0.00	\$80.41

Notes: Apprentice entered prior 9/30/10:
40/45/50/55/60/65/70/75/80/85
Steps are 850 hours

Apprentice to Journeyworker Ratio:1:3

STEAM BOILER OPERATOR OPERATING ENGINEERS LOCAL 4	12/01/2022	\$53.05	\$14.25	\$16.05	\$0.00	\$83.35
	06/01/2023	\$54.29	\$14.25	\$16.05	\$0.00	\$84.59
	12/01/2023	\$55.53	\$14.25	\$16.05	\$0.00	\$85.83
	06/01/2024	\$56.81	\$14.25	\$16.05	\$0.00	\$87.11
	12/01/2024	\$58.25	\$14.25	\$16.05	\$0.00	\$88.55
	06/01/2025	\$59.53	\$14.25	\$16.05	\$0.00	\$89.83
	12/01/2025	\$60.97	\$14.25	\$16.05	\$0.00	\$91.27
	06/01/2026	\$62.25	\$14.25	\$16.05	\$0.00	\$92.55
	12/01/2026	\$63.69	\$14.25	\$16.05	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$53.05	\$14.25	\$16.05	\$0.00	\$83.35
	06/01/2023	\$54.29	\$14.25	\$16.05	\$0.00	\$84.59
	12/01/2023	\$55.53	\$14.25	\$16.05	\$0.00	\$85.83
	06/01/2024	\$56.81	\$14.25	\$16.05	\$0.00	\$87.11
	12/01/2024	\$58.25	\$14.25	\$16.05	\$0.00	\$88.55
	06/01/2025	\$59.53	\$14.25	\$16.05	\$0.00	\$89.83
	12/01/2025	\$60.97	\$14.25	\$16.05	\$0.00	\$91.27
	06/01/2026	\$62.25	\$14.25	\$16.05	\$0.00	\$92.55
	12/01/2026	\$63.69	\$14.25	\$16.05	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2022	\$58.09	\$11.49	\$22.34	\$0.00	\$91.92
	02/01/2023	\$59.29	\$11.49	\$22.34	\$0.00	\$93.12
	08/01/2023	\$61.34	\$11.49	\$22.34	\$0.00	\$95.17
	02/01/2024	\$62.59	\$11.49	\$22.34	\$0.00	\$96.42
	08/01/2024	\$64.69	\$11.49	\$22.34	\$0.00	\$98.52
	02/01/2025	\$65.99	\$11.49	\$22.34	\$0.00	\$99.82
	08/01/2025	\$68.14	\$11.49	\$22.34	\$0.00	\$101.97
	02/01/2026	\$69.49	\$11.49	\$22.34	\$0.00	\$103.32
	08/01/2026	\$71.69	\$11.49	\$22.34	\$0.00	\$105.52
	02/01/2027	\$73.09	\$11.49	\$22.34	\$0.00	\$106.92

Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile

Effective Date - 08/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.05	\$11.49	\$22.34	\$0.00	\$62.88
2	60	\$34.85	\$11.49	\$22.34	\$0.00	\$68.68
3	70	\$40.66	\$11.49	\$22.34	\$0.00	\$74.49
4	80	\$46.47	\$11.49	\$22.34	\$0.00	\$80.30
5	90	\$52.28	\$11.49	\$22.34	\$0.00	\$86.11

Effective Date - 02/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.65	\$11.49	\$22.34	\$0.00	\$63.48
2	60	\$35.57	\$11.49	\$22.34	\$0.00	\$69.40
3	70	\$41.50	\$11.49	\$22.34	\$0.00	\$75.33
4	80	\$47.43	\$11.49	\$22.34	\$0.00	\$81.26
5	90	\$53.36	\$11.49	\$22.34	\$0.00	\$87.19

Notes:

Apprentice to Journeyworker Ratio:1:3

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$42.58	\$9.10	\$17.72	\$0.00	\$69.40
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For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$41.30	\$9.10	\$17.72	\$0.00	\$68.12
For apprentice rates see "Apprentice- LABORER"						
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$41.18	\$9.10	\$17.72	\$0.00	\$68.00
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$53.05	\$14.25	\$16.05	\$0.00	\$83.35
	06/01/2023	\$54.29	\$14.25	\$16.05	\$0.00	\$84.59
	12/01/2023	\$55.53	\$14.25	\$16.05	\$0.00	\$85.83
	06/01/2024	\$56.81	\$14.25	\$16.05	\$0.00	\$87.11
	12/01/2024	\$58.25	\$14.25	\$16.05	\$0.00	\$88.55
	06/01/2025	\$59.53	\$14.25	\$16.05	\$0.00	\$89.83
	12/01/2025	\$60.97	\$14.25	\$16.05	\$0.00	\$91.27
	06/01/2026	\$62.25	\$14.25	\$16.05	\$0.00	\$92.55
	12/01/2026	\$63.69	\$14.25	\$16.05	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2021	\$36.82	\$13.41	\$16.01	\$0.00	\$66.24
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2022	\$54.81	\$9.35	\$18.42	\$0.00	\$82.58
	06/01/2023	\$55.81	\$9.35	\$18.42	\$0.00	\$83.58
	12/01/2023	\$57.06	\$9.35	\$18.42	\$0.00	\$84.83
	06/01/2024	\$58.54	\$9.35	\$18.42	\$0.00	\$86.31
	12/01/2024	\$60.01	\$9.35	\$18.42	\$0.00	\$87.78
	06/01/2025	\$61.51	\$9.35	\$18.42	\$0.00	\$89.28
	12/01/2025	\$63.01	\$9.35	\$18.42	\$0.00	\$90.78
	06/01/2026	\$64.56	\$9.35	\$18.42	\$0.00	\$92.33
	12/01/2026	\$66.06	\$9.35	\$18.42	\$0.00	\$93.83
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2022	\$56.81	\$9.35	\$18.42	\$0.00	\$84.58
	06/01/2023	\$57.81	\$9.35	\$18.42	\$0.00	\$85.58
	12/01/2023	\$59.06	\$9.35	\$18.42	\$0.00	\$86.83
	06/01/2024	\$60.54	\$9.35	\$18.42	\$0.00	\$88.31
	12/01/2024	\$62.01	\$9.35	\$18.42	\$0.00	\$89.78
	06/01/2025	\$63.51	\$9.35	\$18.42	\$0.00	\$91.28
	12/01/2025	\$65.01	\$9.35	\$18.42	\$0.00	\$92.78
	06/01/2026	\$66.56	\$9.35	\$18.42	\$0.00	\$94.33
	12/01/2026	\$68.06	\$9.35	\$18.42	\$0.00	\$95.83
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2022	\$46.88	\$9.35	\$18.42	\$0.00	\$74.65
	06/01/2023	\$47.88	\$9.35	\$18.42	\$0.00	\$75.65
	12/01/2023	\$49.13	\$9.35	\$18.42	\$0.00	\$76.90
	06/01/2024	\$50.61	\$9.35	\$18.42	\$0.00	\$78.38
	12/01/2024	\$52.08	\$9.35	\$18.42	\$0.00	\$79.85
	06/01/2025	\$53.58	\$9.35	\$18.42	\$0.00	\$81.35
	12/01/2025	\$55.08	\$9.35	\$18.42	\$0.00	\$82.85
	06/01/2026	\$56.63	\$9.35	\$18.42	\$0.00	\$84.40
	12/01/2026	\$58.13	\$9.35	\$18.42	\$0.00	\$85.90

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) LABORERS (FREE AIR TUNNEL)	12/01/2022	\$48.88	\$9.35	\$18.42	\$0.00	\$76.65
	06/01/2023	\$49.88	\$9.35	\$18.42	\$0.00	\$77.65
	12/01/2023	\$51.13	\$9.35	\$18.42	\$0.00	\$78.90
	06/01/2024	\$52.61	\$9.35	\$18.42	\$0.00	\$80.38
	12/01/2024	\$54.08	\$9.35	\$18.42	\$0.00	\$81.85
	06/01/2025	\$55.58	\$9.35	\$18.42	\$0.00	\$83.35
	12/01/2025	\$57.08	\$9.35	\$18.42	\$0.00	\$84.85
	06/01/2026	\$58.63	\$9.35	\$18.42	\$0.00	\$86.40
	12/01/2026	\$60.13	\$9.35	\$18.42	\$0.00	\$87.90
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/01/2021	\$36.24	\$13.41	\$16.01	\$0.00	\$65.66
VOICE-DATA-VIDEO TECHNICIAN ELECTRICIANS LOCAL 96	09/04/2022	\$34.19	\$12.20	\$15.91	\$0.00	\$62.30

Apprentice - VOICE-DATA-VIDEO TECHNICIAN - Local 96

Effective Date - 09/04/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.10	\$12.20	\$4.27	\$0.00	\$33.57
2	55	\$18.80	\$12.20	\$4.32	\$0.00	\$35.32
3	60	\$20.51	\$12.20	\$15.50	\$0.00	\$48.21
4	65	\$22.22	\$12.20	\$15.55	\$0.00	\$49.97
5	70	\$23.93	\$12.20	\$15.60	\$0.00	\$51.73
6	75	\$25.64	\$12.20	\$15.65	\$0.00	\$53.49
7	80	\$27.35	\$12.20	\$15.70	\$0.00	\$55.25
8	85	\$29.06	\$12.20	\$15.75	\$0.00	\$57.01

Notes:

Apprentice to Journeyworker Ratio:1:1

WAGON DRILL OPERATOR LABORERS - ZONE 2	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
WAGON DRILL OPERATOR (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2022	\$36.81	\$9.35	\$16.89	\$0.00	\$63.05
	06/01/2023	\$37.71	\$9.35	\$16.89	\$0.00	\$63.95
	12/01/2023	\$38.61	\$9.35	\$16.89	\$0.00	\$64.85
	06/01/2024	\$39.94	\$9.35	\$16.89	\$0.00	\$66.18
	12/01/2024	\$41.27	\$9.35	\$16.89	\$0.00	\$67.51
	06/01/2025	\$42.66	\$9.35	\$16.89	\$0.00	\$68.90
	12/01/2025	\$44.04	\$9.35	\$16.89	\$0.00	\$70.28
	06/01/2026	\$45.48	\$9.35	\$16.89	\$0.00	\$71.72
	12/01/2026	\$46.92	\$9.35	\$16.89	\$0.00	\$73.16
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2022	\$53.63	\$14.25	\$16.05	\$0.00	\$83.93
	06/01/2023	\$54.88	\$14.25	\$16.05	\$0.00	\$85.18
	12/01/2023	\$56.13	\$14.25	\$16.05	\$0.00	\$86.43
	06/01/2024	\$57.43	\$14.25	\$16.05	\$0.00	\$87.73
	12/01/2024	\$58.88	\$14.25	\$16.05	\$0.00	\$89.18
	06/01/2025	\$60.18	\$14.25	\$16.05	\$0.00	\$90.48
	12/01/2025	\$61.63	\$14.25	\$16.05	\$0.00	\$91.93
	06/01/2026	\$62.93	\$14.25	\$16.05	\$0.00	\$93.23
	12/01/2026	\$64.38	\$14.25	\$16.05	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS LOCAL 4</i>	09/01/2022	\$50.50	\$9.80	\$17.02	\$0.00	\$77.32
	03/01/2023	\$51.90	\$9.80	\$17.02	\$0.00	\$78.72
	09/01/2023	\$53.30	\$9.80	\$17.02	\$0.00	\$80.12
	03/01/2024	\$54.70	\$9.80	\$17.02	\$0.00	\$81.52
	09/01/2024	\$56.10	\$9.80	\$17.02	\$0.00	\$82.92
	03/01/2025	\$57.50	\$9.80	\$17.02	\$0.00	\$84.32
	09/01/2025	\$58.90	\$9.80	\$17.02	\$0.00	\$85.72
		03/01/2026	\$60.30	\$9.80	\$17.02	\$0.00
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						

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.

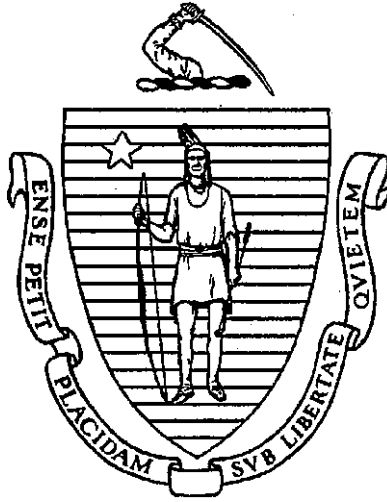
All steps are six months (1000 hours.)

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.



BID PACKAGE

PART II

Forms for Contract Execution

- Executive Order 481
- Executive Order 504 (2 pages)
- Owner- Contractor Agreement
- 50% Payment Bond
- Prompt Payment Discount
- Certificate of Compliance with State Tax Laws and With Unemployment Compensation Contribution Requirements
- Certificate of Compliance with Employment Eligibility Verification Requirements (I-9)
- Request for Taxpayer Identification Number and Certification (W-9) (2 pages)
- Commonwealth of Massachusetts Contractor Authorized Signatory Listing (2 pages)
- Electronic Funds Transfer Sign Up Form
- Insurance Document Required - Proof of Insurance amounts per Part 3 General Conditions of the Contract

**Forms are for Reference Only
To be used for contract award and execution**

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE ORDER 481 - CONTRACTOR CERTIFICATION
PROHIBITING THE USE OF UNDOCUMENTED WORKERS ON STATE CONTRACTS



CONTRACTOR LEGAL NAME:
CONTRACTOR VENDOR/CUSTOMER CODE:

INSTRUCTIONS:

Executive Order 481 applies to all state agencies in the Executive Branch, including all executive offices, boards, commissions, agencies, departments, divisions, councils, bureaus, and offices, now existing and hereafter established. As it is the policy of the Executive Branch to prohibit the use of undocumented workers in connection with the performance of state contracts, all contracts entered into after February 23, 2007 require that contractors, as a condition of receiving Commonwealth funds under any Executive Branch contract, make the following certification:

CONTRACTOR CERTIFICATION:

As evidenced by the signature of the Contractor's Authorized Signatory below, the Contractor certifies under the pains and penalties of perjury that the Contractor shall not knowingly use undocumented workers in connection with the performance of all Executive Branch contracts; that pursuant to federal requirements, the Contractor shall verify the immigration status of all workers assigned to such contracts without engaging in unlawful discrimination; and that the Contractor 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 period of each contract 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.

_____ Date: _____
Contractor Authorizing Signature

_____ Print Name

Title: _____ Telephone: _____

Fax: _____ Email: _____

The Contractor is required to sign this Certification only once and may provide a copy of the signed Certification for any contract executed with an Executive Branch Department. A copy of this signed Certification must be attached to the "record copy" of all contracts with this Contractor that are filed with the contracting Department.

Executive Order 504 Contractor Certification Form

BIDDER/CONTRACTOR LEGAL NAME:

BIDDER/CONTRACTOR VENDOR/CUSTOMER CODE:

Executive Order 504: For all Contracts involving the Contractor's access to personal information, as defined in M.G.L. c. 93H, and personal data, as defined in M.G.L. c. 66A, owned or controlled by Executive Department agencies, or access to agency systems containing such information or data (herein collectively "personal information"), Contractor certifies under the pains and penalties of perjury that the Contractor (1) has read Commonwealth of Massachusetts Executive Order 504 and agrees to protect any and all personal information; and (2) has reviewed all of the Commonwealth of Massachusetts Information Technology Division's Security Policies available at www.mass.gov/ITD under Policies and Standards.

Notwithstanding any contractual provision to the contrary, in connection with the Contractor's performance under this Contract, for all state agencies in the Executive Department, including all executive offices, boards, commissions, agencies, departments, divisions, councils, bureaus, and offices, now existing and hereafter established, the Contractor shall:

(1) obtain a copy, review, and comply with the contracting agency's Information Security Program (ISP) and any pertinent security guidelines, standards and policies; (2) comply with all of the Commonwealth of Massachusetts Information Technology Division's Security Policies ("Security Policies") available at www.mass.gov/ITD under Policies and Standards;

(2) communicate and enforce the contracting agency's ISP and such Security Policies against all employees (whether such employees are direct or contracted) and subcontractors;

(3) implement and maintain any other reasonable appropriate security procedures and practices necessary to protect personal information to which the Contractor is given access by the contracting agency from the unauthorized access, destruction, use, modification, disclosure or loss;

(4) be responsible for the full or partial breach of any of these terms by its employees (whether such employees are direct or contracted) or subcontractors during or after the term of this Contract, and any breach of these terms may be regarded as a material breach of this Contract;

(5) in the event of any unauthorized access, destruction, use, modification, disclosure or loss of the personal information (collectively referred to as the "unauthorized use"): (a) immediately notify the contracting agency if the Contractor becomes aware of the unauthorized use; (b) provide full cooperation and access to information necessary for the contracting agency to determine the scope of the unauthorized use; and (c)

provide full cooperation and access to information necessary for the contracting agency and the Contractor to fulfill any notification requirements.

Breach of these terms may be regarded as a material breach of this Contract, such that the Commonwealth may exercise any and all contractual rights and remedies, including without limitation indemnification under Section 11 of the Commonwealth's Terms and Conditions, withholding of payments, contract suspension, or termination. In addition, the Contractor may be subject to applicable statutory or regulatory penalties, including and without limitation, those imposed pursuant to M.G.L. c. 93H and under M.G.L. c. 214, § 3B for violations under M.G.L. c. 66A.

Bidder/Contractor Name: _____

Bidder/Contractor Authorized Signature: _____

Print Name and Title of Authorized Signatory: _____

Date: _____

This Certification may be signed once and photocopied to be attached to any Commonwealth Contract that does not already contain this Certification Language and shall be interpreted to be incorporated by reference into any applicable contract subject to Executive Order 504 for this Contractor.

Contractor's Vendor Code Number: _____



**COMMONWEALTH OF MASSACHUSETTS
STANDARD CONTRACT
For Projects Not Exceeding \$150,000**

OWNER - CONTRACTOR AGREEMENT

Awarding Authority: **DEPARTMENT OF MENTAL HEALTH**

Department Code **DMH**

This agreement ("Contract") is made as of the ___ day of _____ by and between the **Department of Mental Health** acting by and through the Awarding Authority identified above with a principal place of business at **167 Lyman St., Westborough, MA 01581**, and _____, a **Contractor** with a principal place of business at _____ hereinafter called the "Contractor".

Terms used in this Owner - Contractor Agreement which are defined in the General Conditions of the Contract shall have the meanings designated therein.

The Awarding Authority and the Contractor agree as follows:

Article 1. Scope of Work. The Work under this Contract is defined as all work required by the Contract Documents for the **2023-072 Renovation to the Office of Engineering and Facilities Management (OEFM)**.

Article 2. Time for Completion. The Contractor shall commence the Work under this Contract on the date specified in the written "Notice to Proceed," and shall bring work to substantial completion within **sixty (60) calendar days**.

person administering this Contract on behalf of the Awarding Authority (the “Administrator”) is **Mariana G. O’Brien, Project Engineer**

Article 9. Notices. Notices to the Contractor shall be deemed given when hand delivered to the Contractor's Representative in person, or when deposited in the U.S. mail addressed to the Contractor at the Contractor's address specified in the Owner - Contractor Agreement, or when delivered by courier to either location. Unless otherwise specified in writing by the Awarding Authority, notices and deliveries to the Awarding Authority shall be effective only when delivered to the Awarding Authority at the address specified in the Owner - Contractor Agreement and date-stamped at the reception desk or for which a receipt has been signed by the agent or employee designated by the Awarding Authority to receive official notices.

Article 10. Minority/Women Workforce Utilization Percentages: The applicable goals, for minority and women workforce utilization established for this Contract are as follows:

The applicable minority workforce utilization percentage, if any, is N/A .
The applicable women workforce utilization percentage, if any, is N/A .

Article 11. Additional Insurance Provisions.

N/A

The insurance requirements set forth in Article 7 of the General Conditions of the Contract are supplemented by the provisions, if any, appearing in Exhibit A attached hereto and incorporated herein.

In witness whereof, the parties hereto have caused this instrument to be executed in triplicate under seal as of the date set forth above.

CONTRACTOR:

By: _____ Date _____

Name: _____

Title: _____

AWARDING AUTHORITY: DEPARTMENT OF MENTAL HEALTH (DMH)

By executing this Agreement, the undersigned authorized signatory of the Awarding Authority, who incurs no personal liability by reason of the execution hereof or anything herein contained, hereby certifies under penalties of perjury that all the applicable provisions of M.G.L. c. 30, §39M and M.G.L. c149 , have been complied with.

Name (printed): Paul Truax _____ Date _____

Name (signed): _____

Title: Director, Office of Engineering & Facilities Management _____

PAYMENT BOND

Know all men by these presents, that

_____ as principal, and _____ as surety, are held and firmly bound unto the Commonwealth of Massachusetts in the sum of

_____ in lawful money of the United States of America, to be paid to the Commonwealth of Massachusetts, 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 Commonwealth acting through its _____ ("Awarding Authority") bearing date of _____, 20____, for the construction of Project No. _____ Contract No. _____ Project Name _____

Now the condition of this obligation is such that if the principal 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 purpose or items set out in, and to be subject to, provisions of Massachusetts General Laws Chapter 30, section 39A, and Chapter 149, section 29, as amended, then this obligation shall become null and void; otherwise it shall remain in full force and virtue.

In witness whereof we hereunto set our hand and seals this _____ day of _____, 20__.

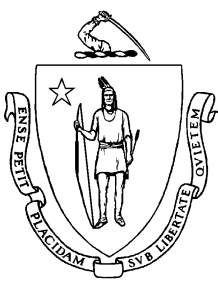
(Print Name of General Contractor) (Seal)

(Print Name of Surety) (Seal)

By _____
(Signature - Title)

(Signature - Title)

Surety Address _____



COMMONWEALTH OF MASSACHUSETTS
Prompt Pay Discount Form
(Invoice discounts for receiving fast payments)

Revised 3/9/07

Bidder Name: _____
Vendor Code (VCUST): _____
Contract/RFR Number(s): _____

Prompt Payment Discounts (PPD). All contractors/vendors doing business with the Commonwealth must provide a Prompt Payment Discount (PPD) for receiving early payments unless the Contractor/vendor can provide compelling proof that providing a prompt pay discount would be unduly burdensome. Contractors benefit from PPD by increased, usable cash flow as a result of fast and efficient payments for commodities or services rendered. Contractors who agree to accept Electronic Funds Transfer (EFT) increase the prompt pay benefit by ensuring that funds are paid directly to their designated bank accounts, thus eliminating the delay of check clearance policies and traditional mail lead time. Payments processed through the state accounting system (MMARS) can be tracked and verified through the Comptroller's [Vendor Web](#) system using the Vendor/Customer Code assigned to you by a Commonwealth department.

The Commonwealth benefits because contractors reduce the cost of products and services through the applied discount. While Bidders/Contractors have flexibility in determining the actual % discount(s) offered to the Commonwealth, the discount(s) must be identified for 10, 15, 20 and/or 30 days for payment issuance in the column entitled "% Discount Off Proposed Price" below. The Commonwealth may use the prompt pay discounts submitted as a basis for selection and may negotiate discounts as deemed in the best interest of the Commonwealth. The requirement to offer PPD discounts may be waived by the Commonwealth on a case-by-case basis if participation in the program would be unduly burdensome, provided the specific reason for the hardship is outlined below.

All discounts offered will be taken in cases where the payment issue date is within the specified number of days listed below and in accordance with the Commonwealth's Bill Paying Policy. Payment days will be measured **from** the date goods are received and accepted / performance was completed OR the date an invoice is received by the Commonwealth, **whichever is later to** the date the payment is issued as an EFT (preferred method) or mailed by the State Treasurer. The date of payment "issue" is the date a payment is considered "paid" not the date a payment is "received" by a Contractor.

If internal Bidder/Contractor systems require an alternate method of measuring payment issue dates, the Bidder/Contractor must note the issues below or on an attached page if necessary to be considered by the PMT. In cases where the Bidder/Contractor considers that offering a Prompt Payment Discount would be a hardship, the Bidder must clearly define the issues and reasons for said hardship. *Providing volume discounts or other discounts on prices is not considered a hardship, since the PPD provides the additional benefit of early cash flow for the Contractor.*

Enter the Prompt Payment Discount percentage (%) off the invoice payment, for each of the payment issue dates listed, if the payment is issued within the specified Payment Issue days. For example:

- 5% - 10 Days**
- 4% - 15 Days**
- 3% - 20 Days**
- 2% - 30 Days**

If no discount is offered enter 0%

Prompt Payment Discount %	Payment Issue Date w/in
%	10 Days
%	15 Days
%	20 Days
%	30 Days

The Contractor is unable to provide a prompt payment discount due to the following hardship:

Contractor/Bidder Authorized Signature _____ Date: _____

Contractor/ Bidder Authorized Signatory Print Name and Title: _____

**CERTIFICATE OF COMPLIANCE WITH STATE TAX LAWS AND
WITH UNEMPLOYMENT COMPENSATION CONTRIBUTION
REQUIREMENTS**

Pursuant to M.G.L., Ch. 62C, s. 49A and M.G.L., Ch. 151A, s. 19A, I,

_____ authorized signatory for

_____ whose principal place of business is at

_____ do hereby certify

under penalties of perjury that _____ has filed all
state tax returns and paid all taxes as required by law and has complied with all state laws
pertaining to contributions to the unemployment compensation fund and to payments in
lieu of contributions.

The Business Organization Social Security Number or Federal Identification Number is

_____.

Signed under the penalties of perjury the _____ day of _____
20 _____.

Signature: _____

Name and Title: _____

Request for Taxpayer Identification Number and Certification

Completed form should be given to the requesting department or the department you are currently doing business with.

Please print or type

Name (List legal name, if joint names, list first & circle the name of the person whose TIN you enter in Part I-See Specific Instruction on page 2)		
Business name , if different from above. (See Specific Instruction on page 2)		
Check the appropriate box: <input type="checkbox"/> Individual/Sole proprietor <input type="checkbox"/> Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Other ▶-----		
Legal Address: number, street, and apt. or suite no.	Remittance Address: if different from legal address number, street, and apt. or suite no.	
City, state and ZIP code	City, state and ZIP code	
Phone # ()	Fax # ()	Email address:

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instruction on page 2. For other entities, it is your employer identification number (EIN). If you do not have a number, see **How to get a TIN** on page 2.

Social security number

□□□-□□-□□□□

OR

Employer identification number

□□-□□□□□□

DUNS

□□□□□□□□

Vendors:
Dunn and Bradstreet Universal Numbering System (DUNS)

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), **and**
- I am not subject to backup withholding because: **(a)** I am exempt from backup withholding, or **(b)** I have not been notified by the Internal Revenue Services (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or **(c)** the IRS has notified me that I am no longer subject to backup withholding, **and**
- I am an U.S. person (including an U.S. resident alien).
- I am currently a Commonwealth of Massachusetts's state employee: (check one): No ___ Yes ___ If yes, **in compliance with** the State Ethics Commission **requirements**.

Certification instructions: You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply.

Sign Here	Authorized Signature ▶	Date ▶
------------------	-------------------------------	---------------

Purpose of Form

A person who is required to file an information return with the IRS must get your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to give your correct TIN to the person requesting it (the requester) and , when applicable, to:

- Certify the TIN you are giving is correct (or you are waiting for a number to be issued).
- Certify you are not subject to backup withholding

If you are a foreign person, use the appropriate Form W-8. See Pub 515, Withholding of Tax on Nonresident Aliens and Foreign Corporations.

What is backup withholding? Persons making certain payments to you must withhold a designated percentage, currently 28% and pay to the IRS of such payments under certain

conditions. This is called "backup withholding." Payments that may be subject to backup withholding include interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

If you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return, payments you receive will not be subject to backup withholding. **Payments you receive will be subject to backup withholding if:**

- You do not furnish your TIN to the requester, or
- You do not certify your TIN when required (see the Part II instructions on page 2 for details), or
- The IRS tells the requester that you furnished an incorrect TIN, or
- The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See the Part II instructions on page 2.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of Federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Name. If you are an individual, you must generally enter the name shown on your social security card. However, if you have changed your last name, for instance, due to marriage without informing the Social Security Administration of the name change, enter your first name, the last name shown on your social security card, and your new last name.

If the account is in joint names, list first and then circle the name of the person or entity whose number you enter in Part I of the form.

Sole proprietor. Enter your **individual** name as shown on your social security card on the "Name" line. You may enter your business, trade, or "doing business as (DBA)" name on the "Business name" line.

Limited liability company (LLC). If you are a single-member LLC (including a foreign LLC with a domestic owner) that is disregarded as an entity separate from its owner under Treasury regulations section 301.7701-3, **enter the owner's name on the "Name" line.** Enter the LLC's name on the "Business name" line.

Caution: *A disregarded domestic entity that has a foreign owner must use the appropriate Form W-8.*

Other entities. Enter your business name as shown on required Federal tax documents on the "Name" line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the "Business name" line.

Part I - Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box.

If you are a **resident alien** and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see **How to get a TIN** below.

If you are a **sole proprietor** and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are an **LLC** that is **disregarded as an entity** separate from its owner (see **Limited liability company (LLC)** above), and are owned by an individual, enter your SSN (or "pre-LLC" EIN, if desired). If the owner of a disregarded LLC is a corporation, partnership, etc., enter the owner's EIN.

Note: See the chart on this page for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get **Form SS-5**, Application for a Social Security Card, from your local Social Security Administration office. Get **Form W-7**, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN or **Form SS-4**, Application for Employer Identification Number, to apply for an EIN. You can get Forms W-7 and SS-4 from the IRS by calling 1-800-TAX-FORM (1-800-829-3676) or from the IRS's Internet Web Site www.irs.gov.

If you do not have a TIN, write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments.

The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Writing "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Part II - Certification

To establish to the paying agent that your TIN is correct or you are a U.S. person, or resident alien, sign Form W-9.

For a joint account, only the person whose TIN is shown in Part I should sign (when required).

Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

Dunn and Bradstreet Universal Numbering System (DUNS) number requirement –

The United States Office of Management and Budget (OMB) requires all vendors that receive federal grant funds have their DUNS number recorded with and subsequently reported to the granting agency. If a contractor has multiple DUNS numbers the contractor should provide the primary number listed with the Federal government's Central Contractor Registration (CCR) at www.ccr.gov. Any entity that does not have a DUNS number can apply for one on-line at www.DNB.com under the DNB D-U-N Number Tab.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to give your correct TIN to persons who must file information returns with the IRS to report interest, dividends, and certain other income paid to you, mortgage interest you paid, the acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA or MSA. The IRS uses the numbers for identification purposes and to help verify the accuracy of your tax return. The IRS may also provide this information to the Department of Justice for civil and criminal litigation, and to cities, states, and the District of Columbia to carry out their tax laws.

You must provide your TIN whether or not you are required to file a tax return. Payers must generally withhold a designated percentage, currently 28% of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to a payer. Certain penalties may also apply.

What Name and Number to Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account ¹ The minor ²
3. Custodian account of a minor (Uniform Gift to Minors Act)	The grantor-trustee ¹
4. a. The usual revocable savings trust (grantor is also trustee)	The actual owner ¹
b. So-called trust account that is not a legal or valid trust under state law	
5. Sole proprietorship	The owner ³
For this type of account:	Give name and EIN of:
6. Sole proprietorship	The owner ³
7. A valid trust, estate, or pension trust	Legal entity ⁴
8. Corporate	The corporation
9. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
10. Partnership	The partnership
11. A broker or registered nominee	The broker or nominee
12. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity

¹ List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN.

³ You must show your individual name, but you may also enter your business or "DBA" name. You may use either your SSN or EIN (if you have one).

⁴ List first and circle the name of the legal trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.)

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

If you have questions on completing this form, please contact the Office of the State Comptroller. (617) 973-2468.

Upon completion of this form, please send it to the Commonwealth of Massachusetts Department you are doing business with.

**COMMONWEALTH OF MASSACHUSETTS
CONTRACTOR AUTHORIZED SIGNATORY LISTING**

Page 1 of 2

Issued May
2004



CONTRACTOR LEGAL NAME :
CONTRACTOR VENDOR/CUSTOMER CODE:

INSTRUCTIONS: **The second page of this form must be completed and notarized for each person listed in the table below.** Any Contractor (other than a sole-proprietor or an individual contractor) must provide a listing of individuals who are authorized as legal representatives of the Contractor who can sign contracts and other legally binding documents related to the contract on the Contractor's behalf. In addition to this listing, any state department may require additional proof of authority to sign contracts on behalf of the Contractor, or proof of authenticity of signature (a notarized signature that the Department can use to verify that the signature and date that appear on the Contract or other legal document was actually made by the Contractor's authorized signatory, and not by a representative, designee or other individual.)

NOTICE: *Acceptance of any payment under a Contract or Grant shall operate as a waiver of any defense by the Contractor challenging the existence of a valid Contract due to an alleged lack of actual authority to execute the document by the signatory.*

For privacy purposes **DO NOT ATTACH** any documentation containing personal information, such as bank account numbers, social security numbers, driver's licenses, home addresses, social security cards or any other personally identifiable information that you do not want released as part of a public record. The Commonwealth reserves the right to publish the names and titles of authorized signatories of contractors.

AUTHORIZED SIGNATORY NAME	TITLE

I certify that I am the President, Chief Executive Officer, Chief Fiscal Officer, Corporate Clerk or Legal Counsel for the Contractor and as an authorized officer of the Contractor I certify that the names of the individuals identified on this listing are current as of the date of execution below and that these individuals are authorized to sign contracts and other legally binding documents related to contracts with the Commonwealth of Massachusetts on behalf of the Contractor. I understand and agree that the Contractor has a duty to ensure that this listing is immediately updated and communicated to any state department with which the Contractor does business whenever the authorized signatories above retire, are otherwise terminated from the Contractor's employ, have their responsibilities changed resulting in their no longer being authorized to sign contracts with the Commonwealth or whenever new signatories are designated.

Signature

Date:

Title: Telephone:

Fax: Email:

[Listing can not be accepted without all of this information completed.]

A copy of this listing must be attached to the "record copy" of a contract filed with the department.

**COMMONWEALTH OF MASSACHUSETTS
CONTRACTOR AUTHORIZED SIGNATORY LISTING**

Page 2 of 2

Issued May
2004



CONTRACTOR LEGAL NAME :
CONTRACTOR VENDOR/CUSTOMER CODE:

PROOF OF AUTHENTICATION OF SIGNATURE

**This page is optional and is available for a department to authenticate contract signatures.
It is recommended that Departments obtain authentication of signature for the signatory
who submits the Contractor Authorized Listing.**

This Section MUST be completed by the Contractor Authorized Signatory in presence of notary.

Signatory's full legal name (print or type):

Title:

X _____

Signature as it will appear on contract or other document (**Complete only in presence of notary**):

AUTHENTICATED BY NOTARY OR CORPORATE CLERK (PICK ONLY ONE) AS FOLLOWS:

I, _____ (NOTARY) as a notary public certify that I witnessed
the signature of the aforementioned signatory above and I verified the individual's identity on this date:

_____, 20 _____.

My commission expires on:

AFFIX NOTARY SEAL

I, _____ (CORPORATE CLERK) certify that I witnessed the
signature of the aforementioned signatory above, that I verified the individual's identity and confirm the individual's
authority as an authorized signatory for the Contractor on this date:

_____, 20 _____.

AFFIX CORPORATE SEAL



COMMONWEALTH OF MASSACHUSETTS
OFFICE OF THE COMPTROLLER

Electronic Funds Transfer (EFT) Authorization Agreement

Complete this form to enroll, modify, or terminate an existing in electronic funds transfer (EFT) agreement with the Commonwealth of Massachusetts Departments.

PART I: REASON FOR SUBMISSION – See Instructions on Page 2

New Enrollment	Change Enrollment	Cancel Enrollment	Document Included: Voided Check	Bank Letter
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PART II: ACCOUNT HOLDER INFORMATION- See Instructions on Page 2

Account Holder Legal Name:		DBA Name:		
Street Address:	City:	State:	Zip Code:	
Account Holder Tax Identification Number (9 digits EIN or SSN)	EIN:	SSN:		

PART III: FINANCIAL INSTITUTION INFORMATION- See Instructions on Page 2

Financial Institution Name:		
Routing Number (only nine digits):	Account Number:	Account Type (Checking or Saving):

IF YOU ARE MODIFYING BANKING INFORMATION, YOU MUST INCLUDE YOUR OLD BANK INFORMATION OR YOUR REQUEST WILL BE RETURNED

Old Financial Institution Name:		
Old Routing Number (only 9 digits):	Old Account Number:	Old Account Type(Checking or Saving):

PART IV: VENDOR/CUSTOMER CONTACT INFORMATION: This is the person we will contact for any questions regarding this EFT – See Instructions on Page 2

Contact Person's Name:	Contact Person's Title:
Contact Person's Phone:	Contact Person's Email Address:

PART V: AUTHORIZATION- See Instructions on Page 2

By signing below, I hereby certify that the account(s) indicated on this form is under my direct control and access; therefore, I authorize the State Treasurer as fiscal agent for the Commonwealth of Massachusetts to initiate, change, or cancel credit entries to the account(s) as indicated on this form. For ACH debits consistent with the International ACH Transaction (IAT) rules check one:

- I affirm that payments authorized by this agreement are not to an account that is subject to being transferred to a foreign bank account.
- I affirm that payments authorized by this agreement are to an account that is subject to being transferred to a foreign bank account.

This authority is to remain in full force and effect until the Office of Comptroller (CTR) has received written notification from either me or an authorized officer of the organization of the account's termination in such time and in such a manner as to afford CTR a reasonable opportunity to act upon it.

Account Holder must sign and mail this EFT form and include a confirmation of account information on bank letterhead or a void check and mail to the Commonwealth Department you are doing business with.

Account Holder Authorized Signature:	Print Name:	Date:
	Title	

PART VI: VERIFICATION FROM THE COMMONWEALTH DEPARTMENT – See Instructions on Page 2

I hereby certify the Vendor/Customer is an authorized signatory and verified by internal records and verbal confirmation initiated by our department.

VCC/VCM Document ID:

Three letter Department Code:

Signature: _____

Title: _____

Date: _____

Print Name: _____

Phone # _____

INSTRUCTIONS FOR COMPLETING THE EFT AUTHORIZATION AGREEMENT

All EFT requests are subject to a 5 (five) day pre-certification period in which all accounts are verified by the qualifying financial institution before any direct deposits are made.

PART I: REASON FOR SUBMISSION

Indicate your reason for completing this form by checking the appropriate box: New EFT enrollment, a change to your EFT enrollment account information, or cancellation of your EFT enrollment.

PART II: ACCOUNT HOLDER INFORMATION

- Account Holder Name: Enter the accounts holder legal name (individual or business name), as reported to the Internal Revenue Service (IRS).
- DBA Name: Enter the DBA name if applicable.
- Street Address: Enter the account holder's street address.
- Enter the account holder's city, state, and zip code.
- Account Holder Tax Identification Number: Enter the tax identification number as reported to the IRS. If the business is a group, organization or corporation, provide the Federal employer identification number (EIN). If enrolling as an individual provide your Social Security Number.

PART III: FINANCIAL INSTITUTION INFORMATION

- Financial Institution Name: Enter your Financial Institution's name (this is the name of the bank or qualifying depository that will receive the funds).
 - **NOTE:** The account name to which EFT payments will be paid is to the name submitted on Part II of this form.
- Routing Number: Enter the bank or financial institutional nine-digit routing number, including applicable leading zeros.
- Account Number: Enter the account holder's account number with the financial institution, including applicable leading zeros.
- Account Type: Enter the account type (Checking or Saving).
- If account holder is changing the banking information, you must provide OLD banking information.
- Old Financial Institution Name: Enter your Financial Institution's name (this is the name of the bank or qualifying depository that will receive the funds).
- Old Routing Number: Enter the Old bank or financial institutional nine-digit routing number, including applicable leading zeros.
- Old Account Number: Enter the Old account holder's account number with the financial institution, including applicable leading zeros.
- Account Type: Enter the Old account type (Checking or Saving).
 - **NOTE:** Supporting bank documents must be in the account holder legal name only.
- If you do not submit this information, your EFT authorization agreement will be returned without further processing.

PART IV: CONTACT INFORMATION

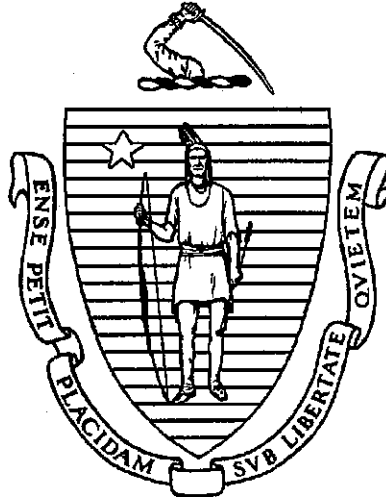
- Enter the name and title of a contact person who can answer questions about the information submitted on this EFT form.
- Enter the contact person's telephone number. Enter the contact person's e-mail address.

PART V: AUTHORIZATION

- By your signature on this form, you are certifying that the account is drawn in the Name of an Individual, or the Legal Business Name of the person or entity who has sole control of the account to which EFT deposits are made.
- The EFT authorization form must be signed and dated by the same account holder name in Part II and include a title and telephone number.
- Mail this form with the original signature in black or blue ink (no facsimile signatures can be accepted) to the Commonwealth Department that you doing business with.

PART VI: VERIFICATION FROM THE COMMONWEALTH DEPARTMENT

By your signature on this form, you are certifying that authentication of the vendor/customer's authorized signatory was conducted by review of the Contractor Signatory Authorization Form (CASL) or by another internal verification process, and additional verification was conducted to confirm banking or address change request. Departments should have multiple known vendor contacts to confirm any registration change.



BID PACKAGE

PART III

GENERAL CONDITIONS OF THE CONTRACT

CHAPTER 149



**COMMONWEALTH OF MASSACHUSETTS
STANDARD VERTICAL CONSTRUCTION CONTRACT
For Projects Subject to M.G.L. c. 149, §§ 44A-F**

GENERAL CONDITIONS OF THE CONTRACT
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ARTICLE I DEFINITION OF TERMS

Other terms, abbreviations and references are defined as they appear herein. Words and abbreviations that are not defined in the Contract Documents but which have recognized technical or trade meanings are used in accordance with those meanings.

The following words shall have the following meanings as used in this Contract:

Approval (or Approved): An approval in writing signed by the authorized signatory of the Awarding Authority.

Awarding Authority: The public agency awarding and administering this Contract identified as the Awarding Authority in the Contract. Where the Awarding Authority is an agency of the Commonwealth, references to the Awarding Authority shall also include the Commonwealth and its agencies.

Building Code: All applicable rules and regulations to which the Awarding Authority is subject and which are contained or referenced in the code authorized by M.G.L. c. 143, § 93 et seq., including all amendments thereto.

Certificate of Substantial Completion: A certificate signed by the Designer and the Awarding Authority pursuant to the requirements of Article VI of these General Conditions, indicating that the Awarding Authority has determined that (1) the Work has been completed in accordance with the Contract Documents, except for Punch List items, (2) certificates of inspection, testing and/or approval (including a certificate of occupancy under the Building Code), operating permits for any mechanical apparatus which may be required to permit full use and occupancy of the Work by its intended users (which in a Subcontractor's case may include the Contractor) have been delivered to the Awarding Authority, (3) any applicable written warranties, operating instructions and related materials have been delivered to the Awarding Authority, and (4) the Work may be used for its intended purpose without substantial inconvenience or interference.

Change Order: (1) A written order not requiring the consent of the Contractor, signed by an authorized representative of the Awarding Authority and designated as a Change Order, directing the Contractor to make changes in the Work within the general scope of the Contract, or (2) any written order from an authorized representative of the Awarding Authority that causes any change in the Work, provided that the Contractor has given the Awarding Authority written notice stating the date, circumstances, and source of the order and that the Contractor regards the order as a Change Order.

Change Order Request: Contractor's written request for a Change Order submitted in accordance with the requirements of Article VII of these General Conditions.

Contract: The Owner - Contractor Agreement executed between the Awarding Authority and the Contractor.

Contract Documents: The documents listed in Article 6 of the Contract.

Contract Modification: Any alteration of the Contract Documents accomplished by a written agreement properly executed by the parties to this Contract.

Contract Price: The Contract Price stated in Article 3 of the Contract which constitutes full compensation to the Contractor for everything to be performed and furnished in connection with the Work and for all damages arising out of the performance of the Work for which the Contractor is responsible, and constitutes the maximum compensation regardless of any difficulty incurred by the Contractor in connection with the Work or in consequence of any suspension or discontinuance of the Work.

Contractor: The person, corporation or other entity identified in the first page of the Contract as the “Contractor”.

DCAMM: The Division of Capital Asset Management and Maintenance of the Commonwealth of Massachusetts. Where DCAMM is an agency of the Commonwealth, references to DCAMM shall also include the Commonwealth and its agencies.

Designer: The architect or engineer identified as the Designer in Article 1 of the Contract.

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 elevations, sections, details, schedules, and diagrams.

Final Acceptance: The written determination by the Awarding Authority that the Work has been 100% completed, except for the Contractor's indemnification obligations, warranty obligations, obligations to continue to maintain insurance coverage for the time periods provided in the Contract Documents, and any other obligations which are intended to survive Final Acceptance and/or the termination of the Contract.

General Bid: The completed bid form submitted by the Contractor in accordance with the requirements of M.G.L. c. 149.

Laws: All applicable statutes, regulations, ordinances, codes, laws, orders, decrees, approvals, certificates and requirements of governmental and quasi-governmental authorities.

Notice to Proceed: The written notice provided by the Awarding Authority to the Contractor which authorizes the Contractor to commence the Work as of a date specified therein, from which date the time of completion specified in Article 2 of the Contract is measured.

Or equal (or words of like import): Equal in the opinion of the Awarding Authority determined pursuant to the provisions of M.G.L. c.30, § 39M and the provisions of these General Conditions.

Owner: The Commonwealth of Massachusetts or political subdivision thereof, authority, or other instrumentality that will own the Work.

Product Data: 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. Product data also include any such information or instructions produced by the manufacturer or distributor of such materials or equipment and made readily available by said manufacturer or distributor.

Progress Schedule: The progress schedule submitted by the Contractor Approved by the Awarding Authority in accordance with the Contract Documents.

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.

Punch List: A list of items determined by the Awarding Authority to be minor incomplete or unsatisfactory work items that do not materially impair the usefulness of the Work for its intended purpose.

Resident Engineer: The on-Site representative of the Awarding Authority.

Samples: Physical examples, that illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged.

Schedule of Values: The schedule Approved by the Awarding Authority pursuant to Article VIII of these General Conditions which allocates the Contract Price to the various portions of the Work and is used as a basis for payments to the Contractor.

Shop Drawings: Drawings, diagrams, details, 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.

Site: The land and, if any, building(s) or space within any such building(s) on which or in which the Contractor is to perform the Work.

Specifications: The 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, including, without limitation, supplementary general conditions.

Subcontractor: Person or entity with whom the Contractor contracts in accordance with this Contract in order to perform the Work, except as otherwise specifically provided or required herein or by Law.

Substantial Completion: For work subject to M.G.L. c. 30, § 39K, "substantial completion" means that the value of the Work remaining to be done is, in the estimate of the Awarding Authority, less than one percent of the adjusted contract price and shall occur when (1) the Contractor fully completes the Work or substantially completes the Work, or (2) the Contractor substantially completes the work and the Awarding Authority takes possession for occupancy, whichever occurs first. For work subject to M.G.L. c. 30, § 39G "substantial completion" shall mean that the work required by the Contract has been fully completed, completed except for work having a Contract Price of less than one percent of the then adjusted total Contract Price, or substantially all of the Work has been completed and opened to public use except for minor incomplete or unsatisfactory work items that do not materially impair the usefulness of the Work.

Superintendent: The licensed construction supervisor who is an employee of the Contractor designated to be in full-time attendance at the Site throughout the prosecution and progress of the Work and who shall have complete authority to act for the Contractor.

User Agency: The department, county, commission, board, agency or other instrumentality of the Commonwealth of Massachusetts or political subdivision thereof which operates, or

which will operate, the facility at which the Work is undertaken or which comprises the completed Work.

Work: The Work consists of all the work identified in the Contract Documents, including, without limitation, as defined in Article 1 of the Contract and Article II, Section 2 of these General Conditions. The Work comprises the completed construction required by the Contract Documents and includes all labor, tools, materials supplies, equipment, permits and approvals, paperwork, calculations, submittals, and certificates necessary to develop, construct, and complete the Work in accordance with all Laws and all construction and other services required to be supervised, overseen, performed, or furnished by the Contractor or that the Contract Documents require the Contractor to cause to be supervised, overseen, performed or furnished.

ARTICLE II

EXECUTION OF THE CONTRACT, SCOPE OF WORK, INTERPRETATION OF CONTRACT DOCUMENTS

1. Execution.

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

2. Scope of Work.

The Work comprises the completed construction required by the Contract Documents and includes all labor, tools, materials, supplies, equipment, permits, approvals, paperwork, calculations, submittals, and certificates necessary to develop, construct and complete the Work in accordance with all Laws, and all construction and other services required to be supervised, overseen, performed or furnished by Contractor or that the Contract Documents require the Contractor to cause to be supervised, overseen, performed or furnished. The Contractor shall provide and perform for the Contract Price all of the duties and obligations set forth in the Contract Documents.

3. Interpretation.

- A.** The Drawings and Specifications and other Contract Documents are to be considered together and are intended to be mutually complementary, so that any work shown on the Drawings though not specified in the Specifications, and any work specified in the Specifications though not shown on the Drawings, is to be executed by the Contractor as a part of this Contract. Should a conflict occur in or between or among any parts of the Contract Documents that are entitled to equal preference, the better quality or greater quantity shall govern, unless the Awarding Authority directs otherwise. Figured dimensions shall take precedence over scaled dimensions.
- B.** All things that in the opinion of the Designer may be reasonably inferred from the Drawings, Specifications and other Contract Documents are to be executed by the Contractor. The Designer shall determine whether the detail Drawings conform to the general Drawings and Contract Documents, except as may be otherwise determined by the Awarding Authority.

- C. The tables of contents, titles, headings and marginal notes or sub-scripts contained herein are solely to facilitate references, are not intended to be construed as provisions of the Contract, and in no way affect the interpretation of the provisions to which they refer.
- D. Where reference is made in the Contract Documents to publications, standards, or codes issued by associations or societies, such reference shall be interpreted to mean the current edition of such publications, standards, or codes, including revisions in effect on the date of the issuance of the public notice inviting bids or proposals for the Work, notwithstanding any reference to a particular date. The foregoing sentence shall not apply to the dates, if any, specified with respect to insurance policy endorsement forms.
- E. In case of any conflict among the Contract Documents, unless the context clearly otherwise requires, the Contract Documents shall be construed according to the following priorities:
 - First Priority: Contract Modifications and Change Orders
 - Second Priority: Contract, as amended
 - Third Priority: General Conditions of the Contract, as amended
 - Fourth Priority: Drawings, as amended -- schedules take precedence over enlarged detail Drawings, and enlarged detail Drawings take precedence over reduced scale Drawings; figured dimensions shall prevail over scale.
 - Fifth Priority: Specifications, as amended
- F. The Contractor shall refer to all of the Drawings, and to all of the sections of the Specifications, and shall perform all work reasonably inferable therefrom as being necessary to produce the indicated results. Neither the Awarding Authority nor the Designer assumes any liability arising out of jurisdictional issues raised or claims advanced by Subcontractors, trade organizations or other interested parties based on the arrangement or manner of subdivision of the content of the Specifications and Drawings. In the event of any claim arising out of any duplication, conflict, inconsistency or discrepancy within the Specifications or on the Drawings as to the allocation of the Work among the Subcontractors the Contractor shall be solely responsible for resolving the claim and shall be responsible for ensuring that all of the Work is completed, regardless of where it appears in the Specifications or on the Drawings.

4. Distribution of Work.

The distribution of the Work is intended to be described under the appropriate trades and, except for filed sub-bid work, may be redistributed, except as directed herein or as required by any applicable Laws, provided that such redistribution shall cause no controversy among the trades and no delay in the progress of the Work and is in the best interests of the Project.

ARTICLE III
CONTROL OF WORK / ADMINISTRATION OF THE CONTRACT

1. Designer.

Notwithstanding anything to the contrary expressed or implied in this Contract, any of the powers, rights, and duties of the Designer may be exercised by the Awarding Authority, provided that the Awarding Authority shall be under no obligation to do so. The Awarding Authority may rely on the Designer for the performance and exercise of its rights and obligations hereunder and shall be presumed to so rely on the Designer in the absence of an

explicit written assumption by the Awarding Authority of any such rights and obligations, except that any Approval required to be obtained from the Awarding Authority hereunder shall not be valid without the signature of the Awarding Authority. The Awarding Authority may explicitly overrule in writing any action, determination or decision of the Designer should the Awarding Authority choose to do so, except to the extent that the same would violate applicable Law. Subject to the foregoing, the Designer shall be responsible for the general administration of the Contract and shall perform the duties and exercise the rights herein conferred on the Designer. Except as otherwise specifically provided herein, the Designer shall decide all questions which may arise as to the conduct, quantity, quality, equality, acceptability, fitness, and rate of progress of the several kinds of work and materials to be performed and furnished under this Contract, and shall decide all questions which may arise as to the interpretation of the Drawings and Specifications and as to the fulfillment of this Contract on the part of the Contractor. In the case of the death, resignation, inability or refusal of the Designer to act, or the termination of his or her or its employment, the Awarding Authority may appoint another person to act as Designer for the purposes of this Contract. The Awarding Authority shall give written notice to the Contractor of any such appointment.

2. Right of Access to Work.

The Awarding Authority, the User Agency and the Designer (and persons designated by them) may for any purpose enter upon the Work, the Site, and premises used by the Contractor, and the Contractor shall provide safe facilities therefor. Other contractors of the Awarding Authority may also enter upon the same for the purposes which may be required by their contracts or work. Any differences or conflicts which may arise between the Contractor and other contractors of the Awarding Authority with respect to their work shall be initially resolved by the Designer.

3. Inspection No Waiver.

No inspection by the Awarding Authority or the Designer or employees or agents of either of them, and no order, measurement, certificate, approval, payment order, payment, acceptance or any other action or inaction of any of them, shall operate as a waiver by the Awarding Authority of any provision of this Contract.

ARTICLE IV
GENERAL PERFORMANCE OBLIGATIONS OF THE CONTRACTOR

The Contractor shall complete for the Contract Price all Work in a proper, thorough, and workmanlike manner in accordance with the Contract Documents. Without limiting the foregoing and without limiting the Contractor's obligations under any other provision of the Contract Documents, the Contractor shall for the Contract Price perform the following general obligations:

1. Review of Contract Documents and Field Conditions.

A. Before commencing the Work, the Contractor shall carefully study the Contract Documents and carefully compare all Specifications, Drawings, figures, dimensions, lines, marks, scales, directions of the Designer and Awarding Authority, and any other

information provided by the Awarding Authority and shall at once report to the Designer and Awarding Authority any questions, errors, inconsistencies, or omissions.

- B.** Before commencing the Work, 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 and shall at once report to the Designer and Awarding Authority any questions, errors, inconsistencies, or omissions.

2. Supervision and Construction Procedures; Coordination; Cutting, and Patching.

- A.** The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and shall have control over, construction means, methods, techniques, sequences and procedures, and shall be responsible for coordinating all portions of the Work under the Contract.
- B.** The Contractor shall be responsible for the proper fitting of all Work and the coordination of the operations of all trades, Subcontractors, and materialmen engaged in the Work. The Contractor shall guarantee to each of its Subcontractors all dimensions which they may require for the fitting of their Work to all surrounding Work.
- C.** 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.
- D.** The Contractor shall be responsible to the Awarding Authority for the acts and omissions of the Contractor's employees, agents and Subcontractors, and their agents and respective contractors' employees, and other persons performing portions of the Work or supplying materials therefor.
- E.** The Contractor shall be responsible for the inspection of portions of the Work already performed under this Contract to determine that such portions are completed in accordance with industry standards of good workmanship and the Contract Documents and in proper condition to receive subsequent Work.
- F.** The Contractor shall employ a registered land surveyor to perform any engineering required for establishing grades, lines, levels, dimensions, layouts, and reference points for the trades. The Contractor shall be responsible for maintaining benchmarks and other survey marks and shall replace any benchmarks or survey marks that may have become disturbed or destroyed. The Contractor shall verify the materials shown on the Drawings before laying out the Work and shall be responsible for any error resulting from its failure to exercise this precaution.
- G.** Unless otherwise required by the Contract Documents, or directed in writing by the Designer or the Awarding Authority, Work shall be performed during regular working hours, which, unless prescribed otherwise by applicable Law, shall be 7:00 a.m. to 5:00 p.m.. If the Contractor desires to carry on the Work outside of regular working hours or on Saturdays, Sundays, or Massachusetts or federal holidays, then the Contractor shall provide at least forty-eight (48) hours' notice to the Awarding Authority and Designer to allow satisfactory arrangements to be made for inspecting Work in progress and shall bear the costs of such inspection. The Awarding Authority at its election shall be entitled either to issue a credit Change Order to cover such cost or to withhold such cost from any further payments due the Contractor and/or to receive a payment from the Contractor of the amount of such cost.

- H. Work performed outside of regular working hours set forth above without the consent or knowledge of the Designer and/or the Awarding Authority shall be subject to additional inspection and testing as directed by the Designer. The cost of this inspection and testing shall be borne by the Contractor whether the Work is found to be acceptable or not. The Awarding Authority at its election shall be entitled either to issue a credit Change Order to cover such cost or to withhold such cost from any further payments due the Contractor and/or to receive a payment from the Contractor of the amount of such cost.

3. Superintendent.

- A. The Contractor shall employ a Superintendent whose appointment shall be subject to the Approval of the Awarding Authority. The Superintendent shall be in attendance at the Site full-time during the performance of the Work. The Superintendent shall represent the Contractor. Communications given to and from the Superintendent shall be deemed given to and from the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed upon written request in each case. The Superintendent shall attend each job meeting. The Superintendent shall be responsible for coordinating all of the Work of the Contractor and the Subcontractors.
- B. The Superintendent shall be a competent employee regularly employed by the Contractor. The Superintendent shall be licensed in accordance with the Building Code and shall have satisfactorily performed similar duties on previous construction projects similar in type, complexity and scale to the Project. The Superintendent's resume shall be submitted to the Awarding Authority prior to commencement of construction together with such other information as the Awarding Authority may reasonably require in order to determine whether or not to Approve of his or her appointment. Any change in the Superintendent shall require the prior written consent of the Awarding Authority. The Contractor shall establish an emergency telephone line by which the Awarding Authority, the Designer, or their respective agents may contact the Superintendent during non-working hours.

4. Labor.

- A. The Contractor shall employ only competent workers on the Project. The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall certify and ensure that all employees to be employed at the Site 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 ten (10) hours in duration at the time the employee begins work and the Contractor and each of its Subcontractors and others working on the Project shall furnish documentation of successful completion of said course by employees working with the first certified payroll report for each employee. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them. Whenever the Designer shall notify the Contractor in writing that any worker is, in the Designer's 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 written consent of the Designer.
- B. The Contractor shall employ a sufficient number of workers and shall ensure that all its Subcontractors employ a sufficient number of workers to carry on the Work with all

proper speed in accordance with Laws, the requirements of the Contract Documents, and the Progress Schedule.

- C. The Contractor shall procure materials from such sources and shall manage its own forces and the forces of its Subcontractors and any sub-Subcontractors in such a manner as will result in harmonious labor relations on the Site. If union and nonunion workers are employed to perform any part of the Work, the Contractor shall establish and maintain separate entrances to the Site for the use of union and nonunion workers. The Contractor shall cause persons to be employed in the Work who will work in harmony with others so employed. Should the Work be stopped or materially delayed in the Awarding Authority's reasonable judgment due to a labor dispute, the Awarding Authority shall have the right to require the Contractor to employ substitutes acceptable to the Awarding Authority.

5. Notices and Permits.

- A. The Contractor at its sole cost shall take out and pay for all approvals, permits, certificates and licenses required by Laws, pay all charges and fees, and pay for (or cause the appropriate Subcontractor to pay for) all utilities required for the proper execution of the Work.
- B. The Contractor shall comply with all Laws and shall give all notices required thereby.
- C. Except as otherwise specified in this Contract, it is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable Laws. However, if the Contractor observes that portions of the Contract Documents are at variance with the requirements of Laws, the Contractor shall promptly notify the Designer and Awarding Authority in writing, and necessary changes shall be accomplished by an appropriate Contract Modification.
- D. If the Contractor performs Work knowing it to be contrary to Laws without giving such notice to the Designer and Awarding Authority, the Contractor shall bear full

responsibility for such Work and all costs attributable thereto, including, without limitation, corrections to the Work.

6. Lines, Marks etc.

The Contractor shall furnish batter boards and stakes and shall cause to be placed and maintained thereon so as to be easily read, such lines, marks and directions relating to the Work as the Designer shall from time to time direct. The Designer shall establish base lines and benchmarks on the Drawings for the locations of the Work but all other lines and grades shall be determined by the Contractor.

7. Excavation.

The Contractor shall prevent by sheeting and shoring or bracing, if necessary, any caving or bulging of the sides of any excavation made by the Contractor, leaving sheeting and shoring in place, or if any is removed, filling solid the spaces left thereby.

8. Dewatering/Hoisting/Staging.

The Contractor shall provide pumping, drainage, and disposal of all water and other flows so that no puddle, nuisance, or damage will be caused by water or flooding. The Contractor shall provide all hoisting equipment and machinery required for the proper execution of the Work. The Contractor shall provide all exterior and interior staging required to be over eight feet in height, except as may be otherwise provided in the Contract Documents.

9. Corrections to the Work; Inspection No Bar to Subsequent Corrections.

The inspection of the Work by the Designer, the Awarding Authority or their respective consultants shall not relieve the Contractor of its responsibilities to fulfill the Contract obligations. Defective work may be rejected by the Designer, the Awarding Authority, or their respective designated consultants, whether or not such work and/or materials have been previously overlooked or misjudged by the Designer, the Awarding Authority, or their respective consultants 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 cease the performance of any defective work in progress and, whether or not such work is still in progress, shall forthwith correct such defect in a manner satisfactory to the Designer, the Awarding Authority, or their respective designated consultants. If any material brought upon the Site for use in the Work, or selected for the same, is rejected by the Designer, the Awarding Authority, or their respective consultants as unsuitable or not in conformity with the Contract Documents, or as damaged by casualty or deteriorated due to improper storage at the Site or to any other factor, the Contractor shall forthwith remove such materials from the Site. The Contractor shall pay for the cost of making good all work or property of other contractors or of the Owner destroyed or damaged by such removal or replacement; repair, finish and immediately make good any injury, defect, omission or mistake in the Work as soon as it is discovered; and complete and leave the Work in perfect condition.

10. Sanitary Facilities.

- A. The Contractor shall provide and maintain sanitary facilities for all persons employed on the Work, beginning with the first worker at the Site. Said facilities shall meet the following requirements unless otherwise specified in the Specifications.
- B. There shall be no fewer facilities than the number required by applicable Laws.
- C. Facilities shall be kept in a clean sanitary condition at all times and shall be adequately screened to be inaccessible to flies.

(Note: If existing sanitary facilities at the Site are to be used by the Contractor, this requirement will be modified accordingly in the Specifications.)

11. Temporary Offices.

- A. Except as otherwise specified in the Contract Documents, the Contractor shall erect the following temporary offices near the Site as directed by the Designer and adequately furnish and maintain them in a clean, orderly condition:
 - (1) A Contractor's field office at which Contractor's authorized representative shall be present at all times while work is in progress. Instructions, notices, and other communications delivered there by the Designer or the Awarding Authority shall be deemed delivered to the Contractor.
 - (2) The Contractor shall provide a separate conference room space with a conference table and chairs sufficient to accommodate 12 persons at one time.
- B. The Contractor shall relocate the Resident Engineer's trailer, as well as services connected with said trailer, at no additional cost to the Owner if the need for relocation arises as determined by the Designer.

12. Contract Documents and Samples at the Site.

A reasonable number of sets of Contract Documents will be furnished to the Contractor by the Awarding Authority immediately after signing of the Contract, one of which shall be maintained at the Site for reference by authorized representatives of the Awarding Authority. The Contractor shall maintain at the Site for the use and information of the Awarding Authority one record copy of the Drawings, Specifications, addenda, Change Orders, Approved Shop Drawings, Product Data, Samples, updated Progress Schedule, and all other submittals, all in good order and marked currently to record changes and selections made during construction. These shall be available to the Designer and the Awarding Authority and shall be delivered to the Designer for submittal to the Awarding Authority upon completion of the Work. The Drawings, Specifications, and other documents prepared by the Designer and copies thereof furnished to the Contractor are for use solely with respect to this Project. The Contractor shall not permit their release to other parties except as may be necessary in dealing with governmental authorities in the ordinary course of permitting and constructing the Project. Further, they are not to be used by the Contractor or any Subcontractor or supplier on other projects without the specific written consent of the Awarding Authority and the Designer.

13. Telephones, Data Lines, and Wi-Fi.

The Contractor shall provide and maintain separate individual telephone, data and wi-fi service and pay for all calls, data service, and wi-fi service relating to the Work. Service and equipment shall meet the requirements, if any, of the Contract Documents and shall include provisions for incoming and outgoing calls and continually available wi-fi: (1) in the Contractor's field office for the use of its authorized agents and (2) in the Resident Engineer's office for the use of the Designer and authorized agents of the Owner.

14. Health, Safety, and Accident Prevention

A. In performing the Work, the Contractor shall:

- (1) Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his/her health and/or safety as determined under construction safety and health standards promulgated by the U.S. Secretary of Labor by regulation;
- (2) Protect the lives, health, and safety of other persons; and
- (3) Prevent damage to property, materials, supplies, and equipment.

B. For these purposes, the Contractor shall:

- (1) Comply with 84 Stat. 1590, the "Occupational Safety and Health Act of 1970" (OSHA) and with regulations and standards issued by the U.S. Secretary of Labor at 29 CFR Part 1926; and
- (2) Comply with the trench safety law set forth in M.G.L. c. 82A and regulations promulgated by the Departments of Public Safety and Occupational Safety in 520 CMR 14.00 et. seq., which require at a minimum that: 1) all excavators obtain a permit for all trenches as defined; 2) all excavators must provide protections when trenches are unattended; and 3) authorizes fines for violations; the Contractor shall execute a "Trench Application and Permit" form included in Appendix C with the execution of this Contract.
- (3) Include the terms of this Article IV.14 in every Subcontractor contract so that such terms will be binding on each Subcontractor.
- (4) Designate by written notice to the Awarding Authority a responsible member of its organization at the Site whose duties shall include ensuring safety, implementation of Contractor's safety plan referenced below and preventing accidents.

C. The Contractor shall maintain an accurate record of exposure data on all accidents incident to the Work resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by 29 CFR Part 1904. Without limiting the foregoing, the Contractor shall submit to the Awarding Authority without delay verbal and written reports of all accidents involving bodily injury or property damage arising in connection with the Work.

D. In any emergency affecting the safety of persons or property the Contractor shall immediately act in the exercise of reasonable judgment to prevent threatened damage, injury, or loss. The Contractor shall immediately notify the Awarding Authority of such emergency.

E. The Contractor shall be responsible for its Subcontractors' compliance with the provisions of this Article IV.14.

- F.** Before commencing any portion of the Work on Site, the Contractor shall submit a written Project-specific plan for implementing this Article IV.14. The plan shall include an analysis of the significant hazards to life, limb and property inherent in the performance of the Work and a plan for controlling these hazards.
- G.** Without limiting the foregoing provisions of this Article IV.14, the Contractor shall comply with all health and safety Laws applicable to the Work. Without limitation:
- (1) If the Contractor uses, stores or encounters toxic or hazardous substances it shall comply with 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 shall post a "workplace notice" obtainable from the Department of Labor and Workforce Development.
 - (2) The Contractor shall comply with the Federal Resource Conservation and Recovery Act, the Federal Comprehensive Environmental Response, Compensation and Liability Act, M.G.L. c. 21C, M.G. L. c. 21E, and any other Laws affecting toxic or hazardous materials, solid, special or hazardous waste. Should the Contractor discover unforeseen materials subject to the aforementioned hazardous materials laws at the Site, the Contractor shall immediately comply with any and all requirements for dealing with such materials and notify all required governmental authorities and the Awarding Authority of such discovery.
 - (3) The Contractor shall be responsible for the location of all utilities in connection with the Work. Without limiting the foregoing, the Contractor shall comply with Dig-Safe Laws. Dig-Safe is the Utility Underground Plant Damage Prevention System, 331 Montvale Road, Woburn, MA, 01801, 1-888-344-7233. The Contractor shall 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. This notice shall 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 shall include 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) The Contractor shall comply with M.G.L. c. 149, § 129A, relative to shoring and bracing of trenches.
- H.** Without limiting the Contractor's responsibilities described above, the Contractor shall take all reasonable precautions for the safety of, and the prevention of injury or damage to (i) all agents and employees and contractors on the Work and all other persons who may be affected thereby including the general public, (ii) all the Work and all materials and equipment to be incorporated therein, whether in storage on or off the Site, under the care custody or control of the Contractor or any of its Subcontractors or any contractors directly or indirectly contracting through any of them, and (iii) other property at the Site

or adjacent thereto, including but not limited to trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of the Work. The Contractor shall promptly remedy all damage or loss to any such property caused in whole or in part by the Contractor, any Subcontractor, or anyone directly or indirectly contracted or employed by any of them or by anyone for whose acts any of them may be liable. Without limiting the foregoing, the Contractor shall:

- (1) post and maintain adequate danger signs and other warnings against hazards;
 - (2) promulgate safety regulations and give appropriate notices to the Awarding Authority and users of adjacent utilities and property;
 - (3) ensure the adequate strength and safety of all scaffolding, staging and hoisting equipment, temporary shoring, bracing and tying;
 - (4) protect adjoining private or public property;
 - (5) provide barricades, temporary fences, and covered walkways required by prudent construction practices, Laws and/or the Contract Documents;
 - (6) furnish approved hard hats and other personal protective equipment, furnish approved first aid supplies, furnish the name of the first aid attendant, and maintain a posted list of emergency facilities;
 - (7) provide proper means of access to property where the existing access is cut off by the Contractor;
 - (8) maintain from the beginning of any darkness or twilight through the whole of every night sufficient lights on or near any obstruction so as to guard and protect travelers from injury from such obstruction;
 - (9) maintain adequate security at the Site so as not to expose the Work and surrounding property to vandalism or malicious mischief;
 - (10) provide adequate fire protection procedures during the use of cutting torches, welding equipment, plumbers' torches and other flame and spark producing apparatus;
 - (11) take prompt action to correct any dangerous or hazardous conditions.
- I.** The Contractor shall not use or store explosives in the performance of the Work unless the Contractor first obtains the Awarding Authority's prior written specific Approval. If the Awarding Authority Approves the use or storage of explosives during the performance of the Work, the Contractor shall first comply with all Laws and obtain all permits, approvals, and certificates required in connection with the same and shall exercise best efforts, including but not limited to the employment and supervision of properly qualified personnel, to prevent damage, injuries, and accidents involving said explosives.
- J.** The Contractor shall not permit cutting or welding in or immediately adjacent to existing property of the Owner, Awarding Authority or of anyone else without the Awarding Authority's prior Approval in each instance.

15. Debris and Chemical Waste.

- A.** The Contractor shall not permit the accumulation of interior or exterior debris. The Contractor shall keep the Work area clean at all times. Without limitation, garbage shall be removed daily.

- B.** The Contractor shall properly classify and remove debris and waste from the Site and transport and dispose of it, all in accordance with Laws, employing a qualified and properly licensed transporter, at any landfill, disposal or recycling facility licensed under applicable Laws, including without limitation, hazardous materials Laws. The Contractor shall make all arrangements and give and obtain all notices, communications, documentation, permits, certificates, and approvals necessary for said disposal from the owner or officials in charge of such landfills, disposal or recycling facilities. The Contractor shall bear all fees and costs in connection with such classification, removal, transportation, disposal and storage. The Contractor shall not permit any storage of debris or waste except in accordance with Laws.
- C.** The Contractor shall not permit any open fire on the Site.
- D.** Chemical waste shall be stored in corrosion resistant containers, removed from the Site, and disposed of not less frequently than monthly unless more frequently required by Laws, including without limitation hazardous materials laws, or by the Contract Documents. Disposal of chemical waste shall be performed in accordance with requirements of the U.S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection. Fueling and lubricating of vehicles and equipment shall be conducted in a manner that affords the maximum protection against spills and evaporation. Lubricants shall be disposed of in accordance with procedures meeting all applicable Laws. The Contractor shall immediately notify the Designer and Awarding Authority of any hazardous materials release large enough to require reporting under applicable Laws. The Contractor shall be responsible for immediately cleaning up in accordance with Laws any oil or hazardous materials releases resulting from its operations. Any costs incurred in cleaning up any such releases shall be borne by the Contractor.

16. Weather Protection (M.G.L. c. 149, §§ 44F(1) and 44G).

The Contractor shall furnish and install "weather protection," which means temporary protection of that Work adversely affected by moisture, wind and cold. Weather protection shall be achieved in accordance with the Specifications, and at a minimum shall include covering, enclosing and/or heating working areas such that a minimum temperature of 40 degrees Fahrenheit (or higher temperature, if so stated in the Specifications) is maintained at the working surface during the months of November through March in order to permit construction to be carried on during such period in accordance with the Progress Schedule. After the building or portion thereof is completely enclosed by either permanent construction or substantial temporary materials having a resistance comparable to the specified permanent construction, the Contractor shall provide heat in accordance with the Specifications; if the Specifications do not specify a temperature range for this phase, the Contractor shall provide heat of not less than 55 degrees F. nor more than 75 degrees F. The foregoing provisions do not supersede any specific requirements for methods of construction, curing of materials and the like. Such weather protection shall be consistent with the Progress Schedule, shall permit the continuous progress of the Work necessary to maintain an orderly and efficient sequence of construction operations, shall include one thermometer for every two-thousand (2,000) square feet of floor space or fraction thereof (or as otherwise stated in the Specifications), shall be subject to the Approval of the Awarding Authority, and shall meet such additional requirements as may be specified by the Awarding Authority and by the Contract Documents.

17. Furnishings and Equipment.

When, in the opinion of the Designer, any portion of the Work is in a reasonable condition to receive fittings, furniture, or other property of the Owner not covered by this Contract, the Contractor shall allow the Awarding Authority to bring such fittings, furniture, and/or other property into such portions of the Work and shall provide all reasonable facilities and protection thereof. No such occupancy shall be construed as interfering with the provisions relating to time of completion, or as constituting an acceptance of the whole or any part of the Work. Any furniture or fittings so installed shall be placed in the Work at the risk of the Awarding Authority except that the Contractor shall be liable for damages or losses to such furniture or fittings to the extent such damages or losses arise in whole or in part from the negligence or intentional misconduct of Contractor, Subcontractors, their agents and/or employees, or anyone for whose acts Contractor is responsible.

18. Form for Subcontract.

The Contractor when subcontracting with sub-bidders filed pursuant to M.G.L. c. 149, § 44F shall use the form for subcontract in M.G.L. c. 149, § 44F(4)(c). The Contractor shall not interpret paragraph 3 of the statutory form of subcontract to require such sub-bidders to provide insurance with limits higher than the limits that are required by Article XIV of these General Conditions, assuming that the term “Contractor” therein refers to the sub-bidder and that the term “Contract Price” refers to the sub-bidder’s price stated in paragraph 1 of the statutory form of subcontract.

19. Sales Tax Exemption and Other Taxes.

All building materials and supplies as well as the rental charges for construction vehicles, equipment and machinery rented exclusively for use on the Site, or while being used exclusively for the transportation of materials for the Work are entitled to an exemption from sales taxes under M.G.L. c. 64H, § 6(f). The Contractor shall take all action required to obtain the benefit of such sales tax exemption. The Contractor shall bear the cost of any sales taxes that Contractor incurs in connection with the Work and the Awarding Authority shall not reimburse the Contractor for any such taxes. The exemption number assigned to the Contractor as an exempt purchaser shall be provided to the Contractor by the Awarding Authority upon the written request of the Contractor.

20. Final Cleaning.

At the completion of the Work, the Contractor shall remove all waste materials, rubbish, tools, equipment, machinery and surplus materials, and professionally clean all sight-exposed surfaces so that the Work is clean and ready for occupancy. Subsequent to installation of User Agency furniture, telephones, and equipment, the Contractor shall provide such additional cleaning as may be necessary to remove any soil resulting from installation of such furniture, telephones and equipment. The Contractor shall comply with the detailed final cleaning requirements of the Specifications; in the event of any conflict

between the Specifications and this Section specifically with respect to cleaning at or after the completion of the Work, the Specifications shall apply.

21. Maintenance Data.

Subject to such additional requirements as may be provided in the Contract Documents, the Contractor shall compile four complete and identical binders of operating and maintenance

data for the entire Work, which shall include, at a minimum for all equipment and systems installed, complete operation and maintenance programs, including but not limited to operation and maintenance (O&M) manuals, records of any and all maintenance performed (whether by the Contractor or Subcontractors) between equipment installation and Final Acceptance, all as may be further detailed in the Specifications. The Contractor shall submit record maintenance data to the Designer for approval, shall submit approved maintenance data to the Awarding Authority, and shall instruct and train the User Agency's personnel in proper inspection and maintenance procedures in accordance with the training plan developed and Approved in accordance with the Specifications. If requested by the Awarding Authority, the Contractor shall also submit information on equipment and systems installed as the Work is performed in a format acceptable to the Awarding Authority, which shall be compatible for entry in the Capital Asset Management Information System (CAMIS), as may be further detailed in the Specifications.

22. Closeout Procedures.

The Contractor shall take all actions and submit all items required for the issuance of the Certificate of Substantial Completion and Final Acceptance as specified in the Contract Documents.

23. Risk of Loss.

The Contractor shall bear all risk of loss to the Work during the term of the Contract except for any portion of the Work as to which the Certificate of Substantial Completion has been issued pursuant to Article VI of these General Conditions of the Contract. Nothing herein shall limit the Contractor's responsibilities under Article IX or XV of these General Conditions of the Contract.

24. LEED Requirements.

Contractor understands that, pursuant to Executive Order No. 484, all new construction and renovation projects over 20,000 square feet must, at a minimum, meet a Massachusetts LEED Plus building standard, and that smaller projects must meet the minimum energy performance standards for advanced buildings established by the Commonwealth of Massachusetts Sustainable Design Roundtable. Furthermore, Contractor understands that the Massachusetts LEED Plus standard or a higher LEED standard applies to all projects overseen by DCAMM, as well as all projects built on state land for use by state agencies. Contractor must document compliance with this executive order and Project LEED certification standards as described in the Specifications.

25. Electronic Project Management System.

If so requested by the Awarding Authority, the Contractor and Subcontractors shall be required to use the Awarding Authority's electronic web-based project management information system as a repository for Project correspondence, documentation, budgeting, and scheduling, and all submittals and processes under this Contract, as directed by the Awarding Authority.

26. Drugs/Alcohol.

The Contractor shall direct that all persons coming onto the Site are free of drugs and alcohol. The Contractor shall dismiss from the Project any individual employed by the Contractor or any Subcontractor or suppliers who is found by the Contractor, the Awarding Authority, or the User Agency to be in violation of this provision or in any other way incompetent, guilty of misconduct, or detrimental to the Project.

ARTICLE V **MATERIALS AND EQUIPMENT**

1. Materials Generally.

- A.** Unless otherwise specifically 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.
- B.** Materials and equipment to be installed as part of the Work (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. The Contractor shall inform himself as to, and shall comply with, the provisions of M.G.L. c. 7, § 23A, as amended, and shall abide by the same and all applicable rules, regulations and orders made thereunder in relation to the purchase of supplies and materials in the execution of the Work, including the provisions of M.G.L. c.7, § 22, paragraph 17 which provides that there be "*a preference in the purchase of supplies and materials, other considerations being equal, in favor, first, of supplies and materials manufactured and sold within the Commonwealth, and, second, of supplies and materials manufactured and sold elsewhere within the United States.*"

2. Shop Drawings, Product Data, and Samples.

- A.** The Contractor shall furnish to the Designer all Samples of the materials to be used in the execution of the Work as required by the Contract Documents. The Contractor shall furnish to the Designer in a timely manner all coordination Drawings, shop details, Shop Drawings, and setting diagrams which may be necessary for acquiring and installing materials. These shall be reviewed as required by the Designer. Unless otherwise specified by the Awarding Authority, the Contractor shall provide a minimum of four (4) copies when submitting for final approval by the Designer, one of which shall be returned to the Contractor, one to the Resident Engineer, one to the Awarding Authority and one filed with the Designer. The inspection and approval by the Designer of Shop Drawings and setting diagrams shall be general and shall in no way relieve the Contractor from responsibility for proper fitting, coordinating, construction, and construction sequencing. The Contractor shall furnish to the Designer such information and vouchers relative to the Work, the materials therefor, and the persons employed thereon, as the Designer shall from time to time request.
- B.** 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.

- C. The Contractor shall review, approve, and submit to the 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 Awarding Authority or of separate contractors. Submittals made by the Contractor which are not required by the Contract Documents or which do not comply with the Contract Documents may be returned without action. The Contractor's attention is directed to the provisions of Section 4 of this Article V and to the Specifications.
- D. The Contractor shall prepare and keep current for the Designer's approval a schedule of submittals which is coordinated with the Progress Schedule and allows the Designer reasonable time to review submittals.
- E. 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 Designer. Such Work shall be in accordance with approved submittals.
- F. By 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 and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.
- G. The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Designer's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Designer in writing of such deviation at the time of submittal and the Awarding Authority 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 Designer's or the Awarding Authority's actions.
- H. 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 Designer on previous submittals.
- I. Informational submittals upon which the Designer is not expected to take responsive action may be so identified in the Contract Documents.
- J. When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, such certification must be stamped by a registered Massachusetts professional in the discipline required. The Designer shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.
- K. Materials furnished or used or employed under the Contract must be equal in quality to the Samples furnished and be satisfactory to the Designer.

3. Tests.

- A. Any material to be used in the Work may be tested or inspected at any time by the Designer with the prior Approval of the Awarding Authority and may be rejected if it fails to comply with specified tests. The Awarding Authority shall pay for all testing of specified material, except as provided herein. If the Contractor requests permission to use a material that was not specified, then the Contractor shall pay for such testing. The cost of testing of materials that fail the testing criteria shall be borne by the Contractor

- B.** The Contractor shall notify the Designer and the Awarding Authority of the proposed sources of materials 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 arising from Contractor's failure to designate the proposed source or to order the material in time for adequate testing and inspection. Necessary arrangements shall be made to permit the 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.

4. "Or Equal" Submissions.

- A.** Where products or materials are prescribed by manufacturer name, trade name, or catalog reference, the words "or Approved equal" shall be understood to follow. An item shall be considered equal to the item so named or described if in the opinion of the Awarding Authority (a) it is at least equal in quality, durability, appearance, strength and design, (b) it performs at least equally the function imposed in the general design for the Work, and (c) it conforms substantially, even with deviations, to the detailed requirements for the items as indicated by the Specifications. Any changes in the Work made necessary to accommodate products or materials substituted as an "or equal" shall be at the expense of the Contractor. "Approved equal" shall mean an item with respect to which the Awarding Authority shall have issued a written statement to the Contractor to the effect that the item is, in the Awarding Authority's opinion, equal within the meaning of this paragraph to that prescribed in the Contract Documents.
- B.** The Contractor shall be responsible for providing the Designer with any information and test results that the Designer reasonably requires to determine whether or not a material is equal to a material named or described in the Contract Documents.
- C.** 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 twenty (120) days prior to the date the materials will be used in the Work. In no event shall the Contractor maintain a claim for delays based upon the Designer's review of such substituted materials if the Contractor has failed to comply with the one hundred twenty (120) day submission requirement.
- D.** The Contractor shall save the written calculations, pricing information, and other data that the Contractor used to calculate the General Bid (the "Bid Pricing Materials") for at least six years after the Awarding Authority makes final payment under this Contract. No increase in the Contract Price shall be allowed for any material later found to have been improperly rejected as not being equal unless the Contractor can show persuasive evidence that the rejection increased the Contractor's costs over those provided for in the Bid Pricing Materials, net of all savings the Contractor obtained by substituting other "or-equal" items. Without limiting the foregoing, if the Awarding Authority rejects a proposed substitution on the basis that the item is not equal and if after the Contractor complies with the appeal procedures required by law, DCAMM regulation, and by the Contract Documents, the appropriate authority finds that the proposed substitution was equal, the Contract Price may be increased only to the extent that:
- (1) the item that the Contract Documents specifically require costs more than the item later approved as equal;
 - (2) the Bid Pricing Materials prove that the Contractor calculated its bid using the cost of the item later found as equal;

- (3) any increase is reduced by any cost that the Contractor would have incurred for structural or mechanical changes necessary to accommodate the substitute item;
- (4) the Contractor shall not be entitled to any adjustment for overhead and profit;
- (5) any increase must exceed the aggregate amount that the Contractor saved using products or materials that the Awarding Authority approved as equal under this Contract.

In calculating the Contractor's aggregate saving under the preceding clause (5), the Contractor shall provide the Awarding Authority with the Bid Pricing Materials and a calculation based on the Bid Pricing Materials that compare the price (stated in the Bid Pricing Materials) of each item replaced with an "or equal" item, with the cost of the approved equal item, specifically describes all costs that Contractor would have incurred making structural or mechanical changes to include within the Work the item later found to have been improperly rejected and copies of all plans, specifications, shop drawings, and other design documents that the Awarding Authority deems necessary or desirable.

5. Delivery and Storage of Materials; Inspection.

- A.** 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 and so that their security, quality, and fitness of the materials for the Work is preserved.
- B.** Materials stored off Site shall be insured and stored at the expense of the Contractor so as to guarantee the preservation of their security, quality and fitness for the Work. Without derogating from the Contractor's responsibilities in the previous sentence, when necessary to avoid deterioration or damage, material (on or off Site) shall be placed on wooden platforms or other hard clean surfaces and not on the ground and shall be properly protected.
- C.** The Contractor shall obtain prior written Approval for permission to store materials or equipment to be incorporated into the Work for which progress payments will be requested at off-Site locations. Any and all charges for storage, inspection, and verification by the Designer and Awarding Authority, including insurance, shall be borne solely by the Contractor. Before Approval, the Awarding Authority may require, without limitation
 - (1) evidence that the off-Site location is properly secure;
 - (2) proper proof of insurance and proof of satisfactory contractual arrangement for transportation to the Site; and
 - (3) a certificate from the Contractor stating: (i) the name of the member of the Contractor or Subcontractor that leases or owns the warehouse or other storage facility; (ii) the location of such storage facility, including the storage space (i.e. the entire premises or certain areas of a warehouse giving the number of floors or portions thereof) and a certification that the Contractor has visited such location, verified the storage of such materials or equipment therein or thereon (including confirmation that the materials or equipment are marked and segregated as provided below) and verified payment of all current storage charges; (iii) the date(s) on which the materials or equipment is first stored at such facility; and (iv) a description of the materials or equipment stored, including quantities, types, manufacturers and other identification information, such as serial numbers.

The Contractor shall furnish to DCAMM, not less often than once per month, a current inventory of all materials or equipment being stored at any off-Site location. The Contractor shall mark each sealed carton or other item with the name of the Project and the Awarding Authority, and all materials or equipment stored off-Site shall be segregated to the extent required by the Awarding Authority or the Designer. Payment for materials or equipment stored off-Site shall be at the reasonable discretion of the Awarding Authority, taking into account the schedule requirements of the Work. Title to materials or equipment stored off-Site shall be transferred at the time at which the Awarding Authority pays for them, free of any lien or other interest of the supplier or any other lien or encumbrance. Notwithstanding such transfer of title, the Contractor shall retain sole care, custody and control of, and shall have complete responsibility for the security and protection of, all materials or equipment included in any application for payment which are stored at locations other than the Site, and the Contractor assumes all risk of loss or damage to such materials or equipment, and the Contractor shall hold harmless the Awarding Authority from and against all liabilities arising out of or resulting from loss or damage, from any cause, to such materials or equipment for which payment is requested, including liens, security interests or other claims of any kind by suppliers or other third parties relating to such materials or equipment.

- D. Expenses for inspection of material by the Designer and/or the Awarding Authority personnel including travel, quarters, and subsistence shall be borne by the Contractor requesting the inspection of material stored outside the Commonwealth of Massachusetts as part of the Contract Price. The policy of the Awarding Authority precludes the payment for material stored outside the boundaries of Massachusetts except in extremely limited circumstances with the express written consent of the Awarding Authority. If the Contractor requests an inspection of material stored outside the Commonwealth of Massachusetts, the Awarding Authority will initially pay for all expenses of inspecting the material incurred by the Designer and/or Awarding Authority's personnel including travel, quarters, and subsistence. The Awarding Authority will then give Contractor an invoice for those costs and the Contractor shall submit a credit Change Order in the amount of those expenses.
- E. Stored materials either at the Site or at some other location agreed upon in writing shall be so located as to facilitate prompt inspection and even though approved before storage, may again be inspected prior to their use in the Work.
- F. All storage sites shall be restored to their original condition by the Contractor at the Contractor's expense.
- G. The Contractor shall take charge of and be liable for any loss of or injury to the materials for his use delivered to or in the vicinity of the place where the Work is being done, whether furnished by the Owner or otherwise; the Contractor shall notify the Designer as soon as any such materials are so delivered, allow them to be examined by the Designer, and furnish workers to assist therewith.

6. Defective, Damaged, or Deteriorated Materials and Rejection Thereof.

The Designer may reject materials if the Designer reasonably determines that such materials do not conform to the Contract Documents in any manner, including but not limited to materials that have become damaged or deteriorated from improper storage whether or not such materials have previously been accepted. The Contractor at its own expense shall remove rejected materials from the Work. No rejected material, the defects of which have been

subsequently corrected, shall be used except with the written permission of the Designer. Should the Contractor fail to remove rejected material within a reasonable time, the Designer and/or Awarding Authority may, in addition to any other available remedies, remove and/or replace the rejected material, and deduct the cost of such removal and/or replacement from any moneys due or to become due the Contractor. No extra time shall be allowed for completion of Work by reason of such rejection. The inspection of the Work shall not relieve the Contractor of any of its obligations herein prescribed, and any defective Work shall be corrected. Work not conforming to the Contract Documents may be rejected notwithstanding that such Work and materials have been previously overlooked or misjudged by the Designer and accepted for payment. If the Work or any part thereof shall be found defective at any time before Final Acceptance of the whole Work, the Contractor shall forthwith make good such defect in a manner satisfactory to the Designer. Nothing in the Contract shall be construed as vesting in the Contractor any property rights in the materials used after they have been attached or affixed to the Work or the Site; but all such materials shall upon being so attached or affixed become a property of the Owner.

ARTICLE VI **PROSECUTION AND PROGRESS**

1. Beginning, Progress Schedule, and Completion of Work.

- A.** The Contract time shall commence upon the date specified in the Notice to Proceed. The Contractor shall begin Work at the Site within ten days of said date unless otherwise ordered in writing by the Awarding Authority.
- B.** Prior to the submission of the first progress payment, the Contractor shall submit to the Designer and to the Awarding Authority, a progress schedule for the term of the Contract as required by the Contract Documents, showing in detail his proposed progress for the construction of the various parts of the Work and the proposed times for receiving required materials. Upon Approval by the Awarding Authority, said schedule shall constitute the Progress Schedule. The Contractor shall at the end of each month, or more often if required, furnish to the Designer and to the Awarding Authority a schedule meeting the requirements of the Specifications showing the actual progress of the parts of the Work in comparison with the Progress Schedule.
- C.** Time is of the essence of this Contract. The Work shall be completed within the time specified in Article 2 of the Contract. Should the Contractor require additional time to complete the Work, the Contractor shall document the reasons therefor and submit a written request for an extension of time within 20 days of the occurrence of the event alleged to be the cause of the delay, as provided in this Article and in Article VII of these General Conditions. Failure to submit said written request within the time required by the preceding sentence shall preclude the Contractor from subsequently claiming any time extension due to said delay.
- D.** If, in the opinion of the Designer or the Awarding Authority, the Contractor fails to comply with the Progress Schedule, the Awarding Authority may give the Contractor a written notice to that effect whereupon (1) the Contractor shall, if the notice requires, discontinue all or any portion of the Work (which discontinuance shall neither terminate the Contract nor give the Contractor any claim for an increase in the Contract Price, damages, or an extension of any completion deadlines); or (2) at Contractor's sole cost increase the work force, equipment and plant, or any of them, employed on the whole or any part of the Work, to the extent required by such notice, and employ the same from

day to day until the completion of the Work or such part thereof, or until the failure regarding the rate of progress, in the opinion of the Designer or the Awarding Authority, shall have been sufficiently corrected.

- E. If, in the opinion of the Awarding Authority, the Contractor fails to comply with the Progress Schedule, and whether or not the Awarding Authority shall have given the Contractor a notice described in D above, the Awarding Authority may (but shall not be required to) give the Contractor notice of such failure and five days to cure the same. Unless the Contractor shall within that five days take all necessary steps to do so (including, if the Awarding Authority requires, increasing its forces, equipment and plant) and continue to do so until in the opinion of the Awarding Authority the failure is corrected, the Awarding Authority may at the Contractor's expense and without terminating this Contract take exclusive or joint possession of all or a portion of the Site and employ and direct the labors of existing or such additional forces, equipment and plant as may in the Designer's or Awarding Authority's opinion be necessary to ensure the completion of the Work or such part thereof within the time specified in the Contract Documents or at the earliest possible date thereafter. The Awarding Authority may exercise its rights under this Article at any time and from time to time without waiving any of its rights under this Contract, at law or in equity, including, without limitation, the right to deem this Contract terminated or to order the Contractor to discontinue the Work at any time thereafter. The Contractor shall continue to perform the remaining Work under this Contract even if the Awarding Authority elects to have another contractor perform a portion of the Work under this Article.
- F. The Awarding Authority shall deduct the cost of any actions the Awarding Authority takes under this Article from any amount then due or which might have become due to the Contractor under this Contract had the Contractor performed as required. On demand, the Contractor shall pay the Awarding Authority any amount by which the cost of completing all or any portion of the Work exceeds the amount attributable to that Work under the Contract Documents. The Awarding Authority's sole goal will be to complete the Work that it elects to complete within the time limits stated in the Contract or at the earliest possible date thereafter. Consequently, the Awarding Authority shall have no obligation to obtain competitive bids or the lowest cost for completing the Work or any part thereof, except when it is required by Law. The Awarding Authority's election to complete all or part of the Work shall not release the Contractor from any liability for failure to complete the Work as the Contract Documents require, and shall not entitle the Contractor to a claim for an increase in the Contract Price or an extension of the time for completing the Work. If the cost that the Awarding Authority incurs in completing all or any portion of the Work is less than the amount that the Contract Documents attribute to that Work, the Awarding Authority will pay or credit the difference to the Contractor, less any other costs and expenses that the Awarding Authority incurs, including the cost of supervision, and the Designer's and attorneys' fees and costs.

2. Failure to Complete Work on Time - Liquidated Damages.

- A. If the Contractor shall neglect, fail or refuse to achieve the Substantial Completion Date, the Contractor and the Contractor's surety agree, as a part of the consideration for the execution of this Contract by the Awarding Authority, to pay the Awarding Authority the amounts set forth in Article 2 of the Contract, not as a penalty, but as liquidated damages to cover certain losses, expenses, and damages of the Awarding Authority for such breach of this Contract as herein set forth. The Contractor acknowledges that delay of the

Substantial Completion Date will cause disruption of the Awarding Authority's operations and those of the User Agency. Such disruptions include without limitation, loss of productivity and efficiency and duplication of effort of the User Agency and of employees and contractors engaged by the User Agency and the Awarding Authority for operation of the completed facility. The Awarding Authority and the User Agency will incur other direct administrative, professional, rental, storage, moving, transportation, and other costs in the event of such delay. Delay of the Substantial Completion Date will also require the Awarding Authority to incur additional costs for compensation to the Designer and other consultants or contractors for extended or additional services on the Project. In light of the costs, damages, losses, risks and liabilities described above, the parties agree upon the liquidated damages stated below. Such damages have been fixed and agreed upon because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Awarding Authority and the Commonwealth would, in such event, sustain. Said amounts may be retained by the Awarding Authority on or after the scheduled Substantial Completion Date from current progress payments or any other amounts owing to the Contractor.

- B.** Similarly, if the Contract states that by a specified date a designated portion of the Work shall be prosecuted to the point at which it qualifies for the issuance of a Certificate of Substantial Completion, and if such portion has not been prosecuted to such point by said date, the Contractor shall pay to the Awarding Authority the sum designated in the Contract for each calendar day that the Contractor is in default in completing such portion of the Work to such point. Such moneys shall also be paid as liquidated damages not as a penalty, to cover losses and expenses to the Owner resulting solely from the fact that the Work is not completed on time.
- C.** The Awarding Authority may recover such liquidated damages by deducting the amount thereof from any moneys due or that might become due the Contractor, and if such moneys shall be insufficient to cover the liquidated damages, then the Contractor or the Surety shall pay to the Awarding Authority the amount due.
- D.** Except as otherwise expressly provided, none of the following shall constitute a waiver of the Contractor's or its surety's obligations to pay liquidated damages or any portion thereof or of any of the Owner's rights hereunder at law or in equity:
 - (1) Acceptance of any portion of the Work or payment to the Contractor or its surety therefor;
 - (2) Completion of a portion of the Work or the use and occupancy thereof by the Awarding Authority or others; or
 - (3) The Awarding Authority's requiring or allowing the Contractor or its surety to complete the Work.
- E.** Liquidated damages or a portion thereof may be waived by the Awarding Authority if the Contractor submits evidence satisfactory to the Awarding Authority that the delay was caused solely by conditions beyond the control of the Contractor and that the Awarding Authority has not suffered any damages as a result of said delay.
- F.** Failure by the Awarding Authority to specify a sum as liquidated damages in the Contract, or the insertion of "N/A" or "none" in the space provided therein for liquidated damages, shall not be deemed a waiver of the Awarding Authority's right to recover actual damages arising from the Contractor's failure to complete the Work on time.

3. Delays; Statutory Provisions (M.G.L. c. 30, § 39O).

- A.** Notwithstanding any provision of this Contract to the contrary, except as otherwise provided by Law as set forth in paragraph B below, the Contractor shall not be entitled to increase the Contract Price or to receive damages on account of any hindrances or delays, avoidable or unavoidable, including damages for compression or acceleration of Work, or loss of productivity; but if any delay is caused, in the opinion of Awarding Authority, by the Awarding Authority, the Contractor shall be entitled to an extension of time. The length of the extension shall be sufficient in the opinion of the Awarding Authority or the Contractor to complete the Work. Although no delay shall increase the Contract Price, the Awarding Authority may require that any change in the date by which the Contractor must complete all or any part of the Work be processed on a standard Change Order form.
- B.** If a suspension, delay, interruption or failure to act of the Awarding Authority increases the cost of performance to any Subcontractor, that Subcontractor shall have the same rights against the Contractor with respect to such increase as the Contractor shall have against the Awarding Authority by virtue of (a) and (b) of M.G.L. c. 30, § 390 set forth below, but nothing in provisions (a) and (b) shall alter any other rights which the Contractor or the subcontractor may have against each other. As used in the statutory language of (a) and (b) below, "contract" means this Contract, "general contractor" means the Contractor and "awarding authority" means the Awarding Authority:

"(a) The awarding authority may order the general contractor in writing to suspend, delay, or interrupt all or any part of the work for such period of time as it may determine to be appropriate for the convenience of the awarding authority; provided, however, that if there is a suspension, delay or interruption for fifteen days or more or due to a failure of the awarding authority to act within the time specified in this contract, the awarding authority shall make an adjustment in the contract price for any increase in the cost of performance of this contract but shall not include any profit to the general contractor on such increase; and provided further, that the awarding authority shall not make any adjustment in the contract price 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 price under any other contract provisions.

(b) The general contractor must submit the amount of a claim under provision (a) to the awarding authority 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 awarding authority shall not approve any costs in the claim incurred more than twenty days before the general contractor notified the awarding authority in writing of the act or failure to act involved in the claim."

4. Use and Occupancy Prior to Final Acceptance.

- A.** The Contractor agrees to the use and occupancy of the Project or any portion thereof before Final Acceptance of the Work by the Awarding Authority.
- B.** The Awarding Authority and the User Agency will cooperate with the Contractor with respect to the completion of the Work by taking such reasonable steps as may be possible to avoid interference with the Contractor's Work provided that they do not interfere with the proper functioning of the facility.

- C. The Contractor shall not be responsible for wear and tear or damage resulting solely from temporary occupancy.
- D. Use and occupancy of any part of the Work prior to Final Acceptance by the Awarding Authority shall not relieve the Contractor from maintaining the required payment and performance bonds and insurance (to the extent that insurance is required to be maintained after Substantial Completion) required by this Contract.

5. Certificate of Substantial Completion.

- A. When the Work, or portion thereof which the Awarding Authority agrees to accept separately has reached the state of Substantial Completion as shown on Approved payment request, the Contractor shall develop, with the participation of the Designer and the Awarding Authority, the Punch List identifying those items of unfinished or unacceptable Work that remain to be performed or corrected under the Contract.
- B. Before the Work shall be deemed completed to the point where it is ready for the issuance of a Certificate of Substantial Completion, the Contractor shall:
 - (1) Provide Contractor's proposed Punch List containing a statement of the reason for each item listed thereon;
 - (2) Advise the Awarding Authority of proposed changes in insurance in accordance with the provisions of this Contract, and provide to the Awarding Authority evidence of Contractor's completed operations insurance coverage to the extent required by the Contract Documents;
 - (3) Execute and submit a notarized warranty on a form provided by the Awarding Authority or otherwise acceptable to the Awarding Authority meeting the requirements of Article IX of these General Conditions, to commence upon the date of the issuance of the Certificate of Substantial Completion for the Work or the designated portion thereof, unless otherwise provided in the Certificate of Substantial Completion;
 - (4) Submit signed special warranties and warranties of longer than one year as required by the Contract Documents;
 - (5) Submit signed maintenance agreements for all portions of the Work specified to receive maintenance after the issuance of the Certificate of Substantial Completion;
 - (6) Submit all preliminary record Drawings and documents and framed data in the forms required by the Contract Documents;
 - (7) Complete all items required to be completed by the Department of Public Safety and obtain a Certificate of Occupancy from the Department of Public Safety (or, if the Awarding Authority is a municipality, the building department having jurisdiction) and similar releases which permit the User Agency and the Awarding Authority full and unrestricted use of the areas claimed to be ready for occupancy;
 - (8) Deliver specified maintenance stocks of materials, required spare parts, and all special tools furnished by manufacturers to persons designated by the Awarding Authority and obtain written receipts for same;
 - (9) Make final changes of lock cylinders or cores and advise the Awarding Authority of the change of project security responsibility;

- (10) Complete start-up of systems and instruct User Agency personnel on proper operation and routine maintenance of all systems and equipment; obtain and submit to User Agency personnel that start-up and instruction have been completed;
- (11) Remove all remaining temporary facilities that are no longer needed, surplus materials, and debris (provided, however, that the Contractor shall not remove construction offices and trailers without the prior Approval of the Awarding Authority);
- (12) Submit final utility meter readings and similar information and advise the User Agency and the Awarding Authority of the change of responsibility for utility charges and payments upon the issuance of the Certificate of Substantial Completion;
- (13) Complete final clean-up of all Work, restoration of damaged finishes, and replacement of all damaged and broken glass not listed on the Contractor's Punch List.
- (14) Complete such other items as may be called for in the Contract Documents, if any, including without limitation the Specifications.

C. After completing the items specified in subsections A and B above, the Contractor shall make a written request for the Designer's inspection for a Certificate of Substantial Completion in accordance with the Contract Documents. The Designer shall review the submittals and the Work and shall either 1) sign a Certificate of Substantial Completion or 2) notify the Contractor of incomplete and/or incorrect Work that must be completed and corrected prior to the issuance of the Certificate of Substantial Completion. The Designer shall notify the Contractor of any additions to the Punch List. In connection with the execution of the Certificate of Substantial Completion the Designer shall assign dollar values to each item on the Punch List. Failure to include any incomplete or defective item on the Punch List shall not relieve the Contractor of the obligation to complete all Work in accordance with the Contract Documents.

6. Final Acceptance of the Work.

A. **Prerequisites for Final Acceptance.** After the issuance of a Certificate of Substantial Completion for the entire Work, and after the Contractor has completed all of the Work required by this Contract, including Change Orders and Punch List items, the Contractor shall submit the following completed items to the Awarding Authority together with such additional items as may be specified in the Contract Documents:

- (1) A completed final application for payment showing a final accounting of all changes in the Work, on the form provided by the Awarding Authority.
- (2) Certification and satisfactory evidence that all taxes, fees, and similar obligations have been paid.
- (3) Consent of the Contractor's surety to final payment executed by applicable bonding companies.
- (4) Certified copy of the Punch List stating that the Contractor has completed or corrected every item listed.
- (5) Evidence of Contractor's continuing completed operations insurance coverage to the extent required by the Contract Documents.

- (6) All final record Drawings and documents in the forms specified by the Contract Documents.
- (7) A notarized certification that all purchases made under the tax exemption certificate were legitimate and entitled to exemption.
- (8) Written certifications from the Department of Public Safety (or if the Awarding Authority is a municipality, the building department having jurisdiction) and the Designer to the effect that: a) the Work has been inspected for compliance with the Contract Documents and has satisfied the Department of Public Safety; b) all equipment and systems included in the Work have been tested in the presence of the Designer and are operational and satisfactory; c) the Work is completed and ready for final inspection.
- (9) Such other items as may be required by the Contract Documents.

B. Reinspection; Final Acceptance. After notification from the Contractor that all remaining Contract exceptions, omissions and incompletions have been completed (with the exception of Contractor's continuing warranty, insurance, indemnification, and such other obligations as are intended by the terms of the Contract Documents to extend beyond the date of Final Acceptance), the Awarding Authority and the Designer shall inspect the Work to verify the completion of the same. If the Work is satisfactory, the Awarding Authority shall prepare a Certificate of Final Acceptance or shall notify Contractor in writing of items which remain to be completed prior to Final Acceptance.

7. One-Year Warranty Repair List and Inspection.

Approximately 30 days prior to the expiration of the comprehensive one-year warranty period, the Contractor shall schedule an appointment with the Awarding Authority for a re-inspection of the Work with the Awarding Authority, and shall thereafter inspect the work at the time scheduled. Based on this inspection and on prior inspections, the Awarding Authority shall issue a "Warranty Repair List" of items to be corrected by the Contractor. The Contractor shall make the repairs and/or replacements listed within 30 days of the issuance of the "Warranty Repair List" unless otherwise agreed by the Awarding Authority in writing.

ARTICLE VII
CHANGES IN THE WORK

1. Change Orders Generally.

- A.** No changes in the Work, the Contract Price, the Substantial Completion date, the Final Acceptance date, or any other provision of an Approval by the Awarding Authority of the Contract Documents shall be made in absence of a Change Order as defined in Article I of these General Conditions, directing the Contractor to perform such changes. Any request for a change in the provisions of this Contract submitted by the Contractor must be made in writing and in accordance with the provisions of this Contract, including the procedures of the Awarding Authority.
- B.** A request for a change in the provisions of this Contract may be submitted to the Awarding Authority by the Contractor, Designer, Resident Engineer or User Agency. The request must be made in writing and in accordance with the provisions of this Contract, Laws, and the procedures of the Awarding Authority. When the Contractor believes that

an event or circumstance gives rise to an adjustment in the Contract Price and/or the Contract time it shall submit a Change Order Request in accordance with the forms and procedures required by the Awarding Authority.

- C.** A written directive may be issued by the Awarding Authority instructing the Contractor to make changes in the Work within the general scope of the Contract, including but not limited to, changes in: (1) the Drawings and Specifications; (2) the method or manner of performance of the Work; (3) the Owner-furnished facilities, equipment, materials, services or Site; (4) the schedule for performance of the Work.
- D.** Whenever a Change Order or written directive will cause a change in the Contractor's cost, the Contractor or the Awarding Authority may request an adjustment in the Contract Price. Such request shall be in writing and shall be submitted by the party making such claim to the other party before commencement of the pertinent work.
- E.** The Awarding Authority and the Contractor shall negotiate in good faith an agreement on an equitable adjustment in the Contract Price, and/or time if appropriate, before commencement of the pertinent Work. In the absence of an agreement for an equitable adjustment, the Awarding Authority shall unilaterally determine the costs attributable to the change and provide the Contractor with a written notice to that effect. The Contractor may appeal the decision of the Awarding Authority within thirty days of receipt of said notice, to the chief executive official of the Awarding Authority (in the case of DCAMM, the DCAMM commissioner) or the chief executive's designee, and the Contractor shall have the right to such further appeal as is provided in M.G.L. c.30, § 39Q set forth in Article VII.4.D. However, if the Contractor shall exercise its rights to appeal the decision of the Awarding Authority as aforesaid, the Contractor shall be required to engage in the mandatory mediation procedures set forth in Article VII.5.
- F.** During the negotiation of an equitable adjustment in the Contract Price, the Contractor shall provide the Awarding Authority with all cost, pricing data and any other information or documentation used by the Contractor in computing the amount of the equitable adjustment, and the Contractor shall certify that the pricing data used was accurate, complete, and current. If the Awarding Authority subsequently determines that the data submitted by the Contractor was inaccurate, incomplete, or not current, the Awarding Authority may exclude such data from consideration under the equitable adjustment request.
- G.** Whenever the Contractor is entitled or believes it is entitled to a Change Order adjusting the Contract Price, the Contractor shall maintain separate accounts (by job order or other suitable accounting procedure) of all costs incurred and attributable to such work and schedule. The Contractor shall maintain a computerized accounting system, acceptable to the Awarding Authority, in which current information as to the status of all such Work and schedule is maintained. The Contractor shall maintain such contemporaneous records as are necessary to provide a clear distinction between the costs of all Change Order Work and proposed Change Order Work, and the costs of other Work and schedule.
- H.** Notwithstanding any provisions in the Contract Documents to the contrary, no additional general conditions cost shall be due for any Change Order or portion of a Change Order resulting from or attributable to:

 - (1) Increases in the cost of allowance items;
 - (2) Substitutions of equipment or materials which are functionally similar to equipment or materials specified in the Contract Documents; or

(3) Sales and use taxes.

- I. The Contractor shall reasonably investigate the validity of Subcontractor and supplier change order requests before agreeing to pass them through to the Awarding Authority. For all Change Order Requests submitted, the Contractor shall certify that: the Change Order Request is made in good faith; the validity of the Contractor's and any Subcontractor and supplier Change Order Requests have been verified; the supporting data is accurate and complete to the best of the Contractor's knowledge and belief; and the Contractor believes the Awarding Authority to be liable for the add amount, or entitled to the deduct amount of the Change Order Request, whichever is applicable.

2. Methods of Computing Equitable Adjustments.

- A. Equitable adjustments in the Contract Price shall be determined according to one of the following methods, or a combination thereof, as determined by the Awarding Authority:

(1) fixed price basis, provided that the fixed price shall be inclusive of items (a) through (g) below and shall be computed in accordance with those provisions and as detailed in the Awarding Authority's instructions and procedures regarding Change Order Request submissions, Contract Modifications and equitable adjustments (For DCAMM Projects, DCAMM Form 13 included in Appendix C to these General Conditions);

(2) estimated lump sum 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 to be subsequently adjusted based upon of actual costs (but subject to a predetermined "not to exceed limit") calculated as follows:

(a) the direct cost (or credit) for labor at the minimum wage rates established for this Contract pursuant to M.G.L. c. 149, §§ 26-27H;

(b) plus (or minus) the cost of workmen's compensation insurance, liability insurance, federal social security and Massachusetts unemployment compensation, which are to be calculated using an allowance equal to 40% applied to said rate. The rate of 40 percent is inclusive of all insurances, taxes, general conditions, overhead, superintendence, fee, and profit. No other expenses are allowed; for example, sick time, vacation time, etc. are included in the all-inclusive rate. Documentation must be provided if a higher percentage is requested and will only be accepted for workmen's compensation over 12.5%.

(c) plus (or minus) the actual direct additional premium costs and expenses incurred as a result of collective bargaining agreements or other agreements between organized labor. No allowance for markups is allowed on these costs.

(d) plus the direct cost of materials and use of equipment; an allowance equal to 15% of the amount of materials and equipment for general conditions, overhead, superintendence, fee, and profit can be applied.

(e) plus certain miscellaneous services Approved in advance by the Awarding Authority (e.g. police details, utilities, etc.) and provided, which may be subject to a 5% markup.

(f) plus (or minus) the actual direct premium cost of payment and performance bonds required of the Contractor and certain Subcontractors for this Contract.

- (g) the Contractor shall receive an allowance equal to 5% of the sum of items (a) through (e) above for overhead, superintendence, fee, and profit when the work is performed by Subcontractors. Subcontractors can also apply an allowance equal to 5% of the sum of items (a) through (e) above for overhead, superintendence, fee, and profit when the work is performed by sub-Subcontractors.
- (4) The Contractor and its Subcontractors are required to anticipate annual updated minimum wage schedules in accordance with M.G.L. c. 149, § 27 and shall not be entitled to claim additional compensation for base bid contract Work due to updated minimum wage schedules.
- B.** If the net change is an increase to the Contract Price, it shall include the value of the Contractor's overhead, superintendence, fee and profit. On any change that involves a net credit, the amount of the credit shall include the hard cost of the work being credited and the value of the overhead, superintendence, fee and profit applicable thereto (calculated as an agreed upon percentage multiplied by such hard cost of the work). Charges for small tools known as "tools of the trade" are not to be computed in the amount of any change in the Contract Price.
- C.** Substitutions in Subcontractors made in accordance with the provisions of M.G.L. c. 149, § 44F shall not be considered Change Orders and shall not entitle the Prime Contractor to any adjustments for overhead, profit, and superintendence, although the Awarding Authority may require that such Contract adjustments be processed on standard Change Order and equitable adjustment forms.
- D.** For DCAMM Projects, refer to Appendix C (Commonly Used Forms) to these General Conditions for instructions regarding Change Orders, Contract Modifications, and equitable adjustments (DCAMM Form 13), form for request for Approval of wages and rates for Change Order pricing (DCAMM Form 14) and format for submission of Change Order (DCAMM Form 15). Section 2 (Directions for Computing Costs for Changes in the Work) of DCAMM Form 13 contains specific information for computing the cost of changes. DCAMM Form 14 and DCAMM Form 15 are available electronically and will be provided to the Contractor prior to the start of construction. The Contractor, all Subcontractors, and sub-Subcontractors shall utilize DCAMM Form 15 when submitting Change Order Requests.

3. Work Performed under Protest.

The Contractor agrees to perform all Work as directed by the Awarding Authority, and if the Awarding Authority determines that certain Work that the Contractor believes to be or to warrant a Change Order under this Article does not represent a change in the Work, the Contractor shall perform said Work. The Contractor shall be deemed to have concurred with the Awarding Authority's determination as aforesaid unless the Contractor shall perform Work under protest in compliance with the following sub-paragraphs (1) and (2) below. Any disputed order, decision or action by the Awarding Authority or its authorized representative shall be fully performed or complied with pending resolution of the dispute.

- (1) If the Contractor claims compensation for a change in the Work that is not deemed by the Awarding Authority to be a change or to warrant additional compensation as claimed by the Contractor, the Contractor shall on or before the first working day following the commencement of any such Work or the sustaining of any such damage submit to the Awarding Authority a written statement of the nature of such Work or

claim. The Contractor shall not be entitled to additional compensation for any Work performed or damage sustained for which written notice is not given within the time limit specified in the preceding sentence, even though similar in character to work or damage with respect to which notice is timely given.

- (2) On or before the second working day after the commencement of such Work or the sustaining of such damage, for each day upon which work occurs or damage is sustained, the Contractor shall file to the extent possible with the Resident Engineer, the Designer, and the Awarding Authority, itemized statements of the details and costs of such Work performed or damage sustained. Unless otherwise indicated by the Awarding Authority in writing, the Contractor shall use the Awarding Authority's "Daily Time and Materials Report" form found in Appendix C to these General Conditions to record all labor and material used. If the Contractor shall fail to make such statements, then the Contractor shall not be entitled to additional compensation for any such work or damages.

4. False Claims, Statutory Provisions Regarding Changes.

- A. Criminal Penalties.** The Contractor's attention is directed to M.G.L. c. 30, § 39I which provides criminal penalties for unauthorized deviations from the Drawings and Specifications, and to M.G.L. c. 30, § 39J and M.G.L. c. 7C, §§ 17-21. The Contractor's attention is also directed to M.G.L. c. 266, § 67B which provides criminal penalties for false claims by Contractor under this Contract:

"Whoever makes or presents to any employee, department, agency or public instrumentality of the commonwealth, or of any political subdivision thereof, any claim upon or against any department, agency, or public instrumentality of the commonwealth, or any political subdivision thereof, knowing such claim to be false, fictitious, or fraudulent, shall be punished by a fine of not more than ten thousand dollars or by imprisonment in the state prison for not more than five years, or in the house of correction for not more than two and one-half years, or both."

- B. Differing Site Conditions (M.G.L. c. 30, § 39N).**

"If, during the progress of the work, the contractor or the Awarding Authority 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 contracting authority may request an equitable adjustment in the contract price of the contract 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. Upon receipt of such a claim from a contractor, or upon its own initiative, the contracting authority 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 a nature as to cause an increase or decrease in the cost of performance of the work or a change in the construction methods required for the performance of the work which results in an increase or decrease in the cost of the work, the contracting authority shall make an equitable adjustment in the contract price and the contract shall be modified in writing accordingly."

- C. Timely Decision By the Awarding Authority (M.G.L. c. 30, § 39P).**

"Every contract subject to section thirty-nine M of this chapter or section forty-four A of chapter one hundred forty-nine which requires the awarding authority, any official, its architect or engineer to make a decision on interpretation of the specifications, approval of equipment, material or any other approval, or progress of the work, shall require that the decision be made promptly and, in any event, no later than thirty days after the written submission for decision; but if such decision requires extended investigation and study, the awarding authority, the official, architect or engineer shall, within thirty days after the receipt of the submission, give the party making the submission 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."

D. Change Order / Contract Interpretation Appeal Procedure (M.G.L. c. 30, § 39Q).

The following provisions apply to every contract awarded by any state agency as defined by M.G.L. c. 7C, § 1 for the construction, reconstruction, alteration, remodeling, repair or demolition of any capital facility as defined by the aforesaid section 39A:

"(a) Disputes regarding changes in and interpretations of the terms or scope of the contract and denials of or failures to act upon claims for payment for extra work or materials shall be resolved according to the following procedures, which shall constitute the exclusive method for resolving such disputes. Written notice of the matter in dispute shall be submitted promptly by the claimant to the chief executive official of the state agency which awarded the contract or his designee. No person or business entity having a contract with a state agency shall delay, suspend, or curtail performance under that contract as a result of any dispute subject to this section. Any disputed order, decision or action by the agency or its authorized representative shall be fully performed or complied with pending resolution of the dispute.

"(b) Within thirty days of submission of the dispute to the chief executive official of the state agency or his designee, he shall issue a written decision stating the reasons therefore, and shall notify the parties of their right of appeal under this section. If the official or his designee is unable to issue a decision within thirty days, he shall notify the parties to the dispute in writing of the reasons why a decision cannot be issued within thirty days and of the date by which the decision shall issue. Failure to issue a decision within the thirty-day period or within the additional time period specified in such written notice shall be deemed to constitute a denial of the claim and shall authorize resort to the appeal procedure described below. The decision of the chief executive official or his/her designee shall be final and conclusive unless an appeal is taken as provided below.

"(c) Within twenty-one calendar days of the receipt of a written decision or of the failure to issue a decision as stated in the preceding subparagraph, any aggrieved party may file a notice of claim for an adjudicatory hearing with the division of hearing officers or the aggrieved party may file an action directly in a court of competent jurisdiction and shall serve copies thereof upon all other parties in the form and manner prescribed by the rules governing the conduct of adjudicatory proceedings of the division of hearing officers. In the event an aggrieved party exercises his option to file an action directly in court as provided in the previous sentence, the twenty-one day period shall not apply to such filing and the period of filing such action shall be the same period otherwise applicable for filing a civil action in superior court. The appeal shall be referred to a hearing officer experienced in construction law and shall be prosecuted in accordance with the formal rules of procedure for the conduct of adjudicatory hearings of the division of hearing officers, except as provided below. The hearing officer shall issue a final decision as expeditiously as possible, but in no event more than one hundred and

twenty calendar days after conclusion of the adjudicatory hearing, unless the decision is delayed by a request for extension of time for filing post-hearing briefs or other submissions assented to by all parties. Whenever, because an extension of time has been granted, the hearing officer is unable to issue a decision within one hundred and twenty days, s/he shall notify all parties of the reasons for the delay and the date when the decision will issue. Failure to issue a decision within the one hundred and twenty-day period or within the additional period specified in such written notice shall give the petitioner the right to pursue any legal remedies available to him without further delay.

"(d) When the amount in dispute is less than ten thousand dollars, a contractor who is party to the dispute may elect to submit the appeal to a hearing officer experienced in construction law for expedited hearing in accordance with the informal rules of practice and procedure of the division of hearing officers. An expedited hearing under this subparagraph shall be available at the sole option of the contractor. The hearing officer shall issue a decision no later than sixty days following the conclusion of any hearing conducted pursuant to this subparagraph. The hearing officer's decision shall be final and conclusive, and shall not be set aside except in cases of fraud."

5. Mandatory Mediation.

In the case of every dispute where the dollar amount in dispute (or the estimated dollar value of the extension of time in dispute) is \$50,000 or more and the Contractor appeals the decision of the chief executive official of the Awarding Authority or his/her designee as required by M.G.L. c.30, § 39Q, quoted in Article VII.4.D.(b) above, the Awarding Authority and the Contractor shall engage in good faith in a non-binding mediation process, which process shall be concluded within sixty days from the date that the Contractor files an appeal from said decision as provided in M.G.L. c.30, § 39Q. In the case of such disputes where the dollar amount in dispute (or the estimated dollar value of the extension of time in dispute) is \$500,000 or more, if the mediation process fails, the Awarding Authority may, in its sole discretion, elect to submit the dispute to an impartial third party, not having an interest in the Owner, the Designer, the Program Manager, the Contractor, or the Project, which shall within sixty (60) days render a non-binding advisory opinion. Unless the parties have previously agreed in writing to a process for submitting disputes to mediation, the Awarding Authority shall determine in its reasonable discretion the procedures to be followed and shall give the Contractor notice of the same in writing within seven (7) days of the date that the Awarding Authority receives notice of the Contractor's appeal from the decision of the chief executive officer of the Awarding Authority or his designee. The cost of the services of any mediator selected by one party to this Contract shall be borne by the party making the selection. The cost of the services of any mediator selected jointly by the parties to this Contract or jointly by mediators selected by the parties to this Contract shall be borne equally by the Contractor and the Awarding Authority.

ARTICLE VIII **PAYMENT PROVISIONS**

1. Schedule of Values.

Before the first application for payment the Contractor shall submit to the Designer and the Awarding Authority for its Approval, a schedule of values in a form acceptable to the Awarding Authority and allocated to various portions of the Work in sufficient detail to reflect the various major components of each trade (with filed Subcontractors as well as MBE/WBE

noted), including quantities when requested, aggregating the total Contract Price and divided so as to facilitate payments for work under each section of the Specifications. The schedule shall be prepared in such form and supported by such data to substantiate its accuracy as the Awarding Authority may require. Each item in the schedule shall include its proper share of overhead and profit. When Approved by the Awarding Authority, it shall constitute the Schedule of Values and shall be used only as a basis for the Contractor's requests for payments and credits, the first of which payments shall not be made until such Schedule of Values is Approved by the Awarding Authority.

2. Payment Liabilities of Contractor.

- A.** The Contractor shall pay to the Owner all expenses, losses and damages, as determined by the Awarding Authority or the Designer, incurred in consequence of any default, defect, omission or mistake of the Contractor or the Contractor's employees or Subcontractors or the making good thereof.
- B.** If the Work (or a portion thereof) is not completed to Substantial Completion and the Contractor has not satisfied the requirements for the issuance of a Certificate of Substantial Completion in accordance with Article VI.5 of these General Conditions, by the date specified in Article 2 of the Contract, the Contractor shall pay to the Owner liquidated damages as provided in Article VI.2 of these General Conditions.

3. Retention of Moneys by Awarding Authority.

- A.** The Awarding Authority may keep any moneys which would otherwise be payable at any time hereunder and apply the same, or so much as may be necessary therefor, to (1) the Owner 's expenditures for the Contractor's account, (2) to secure the Awarding Authority's remedies against the Contractor for the Contractor's breach of its obligations under this Contract or the breach of any person performing any part of the Work and (3) the payment of any expenses, losses or damages incurred by the Awarding Authority or any agency of the Commonwealth as a result of the failure of the Contractor to perform its obligations hereunder. The Awarding Authority may retain, until all claims are settled, such moneys as the Awarding Authority estimates to be the fair value of the Awarding Authority's claims against the Contractor, and of all claims for labor performed or furnished and for materials used or employed in or in connection with the Work and for the rental of vehicles, appliances and equipment employed and for the employment of substitute contractors and labor in connection with the Work filed in accordance with M.G.L. c. 30, § 39A and § 39F. The Awarding Authority may make such settlements and apply thereto any moneys retained under this Contract.
- B.** The Contractor shall each week examine all claims so filed, and if the same are in any respect incorrect or do not correctly show the amount due from the Contractor to the claimant for such labor and materials, the Contractor shall forthwith file with the Awarding Authority a separate written statement of all inaccuracies in each claim and of the correct amount due from the Contractor to each claimant therefor, and shall immediately file a statement of all payments thereafter made to such claimants. Each such statement shall be sworn to and contain a detailed breakdown required by M.G.L. c. 30, § 39F (d) and (e). Unless such statements are so filed by the Contractor the amount shown by the claims filed shall, at the option of the Awarding Authority, be conclusively deemed to be the accurate amount due from the Contractor therefor in all accounting with the Awarding Authority. If the moneys retained under this Contract are insufficient to pay

the sums found by the Awarding Authority to be due under the claims for labor and materials filed as aforesaid, the Awarding Authority may, at its discretion, pay the same, and the Contractor shall repay to the Awarding Authority all sums paid out. The Awarding Authority may also at its discretion use any moneys retained, due or to become due under this Contract for the purpose of paying for both labor and materials used or employed in the Work for which claims have not been filed with the Awarding Authority.

- C. No moneys retained under the provisions of this Article shall be held to be statutory security for the payment of claims filed in accordance with the provisions of M.G.L. c. 149, § 29, as amended, for which security is provided by bond.

4. Applications for Payment.

A. The Contractor shall, once in each month on the day of the month corresponding to the day of the month specified in the Notice to Proceed, unless otherwise directed by the Awarding Authority in writing, on forms provided and in the manner prescribed by the Awarding Authority, submit to the Awarding Authority a statement showing the total amount of Work done to the time of such estimate and the value thereof as approved by the Resident Engineer and the Designer. It shall be the sole responsibility of the Contractor to deliver or cause to be delivered to the "designee" as provided by M.G.L. c. 30, § 39K indicated by the Awarding Authority in writing, said periodic estimate in proper form, approved as provided above and arithmetically correct. For DCAMM projects, the "designee" as provided by M.G.L. c. 30, § 39K shall be the DCAMM Office of Finance Payment Unit, and requests for payment shall be submitted thereto in accordance with the "DCAMM Instructions and Procedures for Payment for Construction Contracts" included in Appendix C to these General Conditions. For other projects, unless otherwise indicated by the Awarding Authority in writing, said "designee" shall be the Resident Engineer, or, if there is no Resident Engineer, the Designer; if there is neither a Resident Engineer nor a Designer the designee shall be a person designated by the Awarding Authority at the project field office or alternatively the home office of the Awarding Authority. All periodic estimates shall contain such certifications and other evidence supporting the Contractor's right to payment as the Awarding Authority may require, including without limitation, lien waivers and other evidence, on such forms as the Awarding Authority may require, establishing that title to the equipment or materials is unencumbered and has been transferred to the Owner.. The Contractor shall include in such periodic estimate only such materials as are incorporated in the Work, except as provided in Article VIII.4.C below. The Awarding Authority shall retain five (5) percent of such estimated value as security for the completion of the Work and while the Contractor continues to carry on the Work, will pay to the Contractor the Approved balance, net of the five (5) percent, all previous payments, and all sums which may be otherwise retained under the provisions of this Contract.

B. Each periodic estimate shall constitute the Contractor's representation that:

- (1) the payment then requested to be disbursed has been incurred by the Contractor on account of the Work and is justly due to Subcontractors or, to the Contractor in the case of other Work performed by the Contractor on account thereof (if the Contractor's self-performance has been previously Approved in accordance with the Contract);
- (2) the materials, supplies and equipment for which application for payment is being submitted have been installed or incorporated into the Work or have been stored at the

Site or at such off Site storage locations as the Awarding Authority shall have Approved;

- (3) the materials, supplies and equipment are insured in accordance with the provisions of this Contract;
- (4) the materials, supplies and equipment are owned by the Owner and are not subject to any liens or encumbrances;
- (5) the Work which is the subject of such periodic estimate has been performed in accordance with the Contract Documents; and
- (6) that all due and payable bills with respect to the Work have been paid to date or shall be paid from the proceeds of such periodic estimate.

The Contractor's attention is directed to the criminal penalties for false claims referenced in Article VII above.

- C. The Contractor may include in a periodic estimate the value of materials or equipment delivered at the Site (or at some location agreed to in writing by the Awarding Authority) only upon delivery to the Awarding Authority of:
- (1) an acceptable transfer of title on the form provided by the Awarding Authority;
 - (2) written certification by the Contractor (or applicable Subcontractor) on the form provided by the Awarding Authority that the Contractor (or the Subcontractor which executed the transfer of title) is the lawful owner and that the materials or equipment are free from all encumbrances, accompanied by receipted invoices or other acceptable proof of prior payment for such materials;
 - (3) a stored materials insurance binder that covers the materials for which payment is requested, that names the Owner as an insured party should the stored materials be subjected to any casualty, loss, or theft prior to their inclusion in the Work. The material(s) or equipment must, in the judgment of the Designer, (a) meet the requirements of the Contract, including prior Shop Drawing, Product Data, and Sample Approval, (b) be ready for use, and (c) be properly stored by the Contractor and be adequately protected until incorporated into the Work. See also Article V.5.D of these General Conditions concerning the cost of inspections.
- D. The Awarding Authority may make changes in any periodic estimate submitted by the Contractor in accordance with M.G.L. c.30, §39K (see below) and the payment due shall be computed in accordance with the changes so made. The provisions of said section 39K shall govern payments on which the Awarding Authority has made changes.
- E. No certificate for payment and no progress payment shall constitute acceptance of Work that is not in accordance with the Contract Documents.

5. Periodic Payments (M.G. L. c. 30, § 39K).

The Awarding Authority shall make payment to the Contractor in accordance with M.G.L. c. 30, § 39K, which provides as follows (for the purposes of the below language, the Awarding Authority shall be considered the “awarding authority”, the Designer shall be considered the “architect” or “engineer”, the Contractor shall be considered the “contractor” and Subcontractors shall be considered “subcontractors”):

"Within fifteen days (30 days in the case of the commonwealth, including local housing authorities) after receipt from the contractor, at the place designated by the awarding

authority if such a place is so designated, of a periodic estimate requesting payment of the amount due for the preceding month, the awarding authority 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 awarding authority upon certification by the contractor that he is the lawful owner and that the materials are free from all encumbrances, but 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 thirty-nine F, and less (3) a retention not exceeding five percent of the approved amount of the periodic payment. After the receipt of a periodic estimate requesting final payment and within sixty-five 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 awarding authority, less than one percent of the original contract price, or (b) the contractor substantially completes the work and the awarding authority takes possession for occupancy, whichever occurs first, the awarding authority 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 and less (2) a retention for direct payments to subcontractors based on demands for same in accordance with the provisions of section thirty-nine F, 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 thirty-nine F. If the awarding authority 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 fifteen days (twenty-four days in the case of the commonwealth) after receipt of such period estimate from the contractor, at the place designated by the awarding authority 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.

The awarding authority may make changes in any periodic estimate submitted by the contractor and the payment due on said periodic estimate shall be computed in accordance with the change so made, but such changes or any requirement for a corrected periodic estimate shall not affect the due date for the periodic payment or the date for the commencement of interest charges on the amount of the periodic payment computed in accordance with the changes made, as provided herein; provided, that the awarding authority may, within seven days after receipt, return to the contractor for correction, any periodic estimate which is not in the required form or which contains computations not arithmetically correct and, in that event, the date of receipt of such periodic estimate shall be the date of receipt of the corrected periodic estimate in proper form and with arithmetically correct computations. The date of receipt of a periodic estimate received on a Saturday shall be the first working day thereafter. The provisions of section thirty-nine G shall not apply to any contract for the construction, reconstruction, alteration, remodeling, repair or demolition of any public building to which this section applies.

All periodic estimates shall be submitted to the awarding authority, or to its designee as set forth in writing to the contractor, and the date of receipt by the awarding authority or its

designee shall be marked on the estimate. All periodic estimates shall contain a separate item for each filed subtrade and each sub-subtrade listed in sub-bid form as required by specifications and column listing the amount paid to each filed subcontractor as of the date of the periodic estimate is filed. The person making payment for the awarding authority shall add the daily interest provided for herein to each payment for each day beyond the due date of receipt marked on the estimate.

A certificate of the architect to the effect that the contractor has fully or substantially completed the work shall, subject to the provisions of section thirty-nine J, be conclusive for the purposes of this section.

Notwithstanding the provisions of this section, at any time after the value of the work remaining to be done is, in the estimation of the awarding authority, less than 1 per cent of the adjusted contract price, or the awarding authority has determined that the contractor has substantially completed the work and the awarding authority has taken possession for occupancy, the awarding authority may send to the general contractor by certified mail, return receipt requested, a complete and final list of all incomplete and unsatisfactory work items, including, for each item on the list, a good faith estimate of the fair and reasonable cost of completing such item. The general contractor shall then complete all such work items within 30 days of receipt of such list or before the contract completion date, whichever is later. If the general contractor fails to complete all incomplete and unsatisfactory work items within 45 days after receipt of such items furnished by the awarding authority or before the contract completion date, whichever is later, subsequent to an additional 14 days' written notice to the general contractor by certified mail, return receipt requested, the awarding authority may terminate the contract and complete the incomplete and unsatisfactory work items and charge the cost of same to the general contractor and such termination shall be without prejudice to any other rights or remedies the awarding authority may have under the contract. The awarding authority shall note any such termination in the evaluation form to be filed by the awarding authority pursuant to the provisions of section 44D of chapter 149."

6. Payment of Subcontractors (M.G.L. c. 30, § 39F).

The Contractor shall make payments to Subcontractors in accordance with M.G.L c.30, § 39F which is quoted in this section below. For the purposes of this Contract, the word "forthwith" appearing in paragraph (1)(a) of the quoted provision shall be deemed to mean "within five (5) business days."

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

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

(c) Each payment made by the awarding authority to the general contractor pursuant to subparagraphs (a) and (b) of this paragraph for the labor performed and the materials furnished by a subcontractor shall be made to the general contractor for the account of that subcontractor; and the awarding authority shall take reasonable steps to compel the general contractor to make each such payment to each such subcontractor. If the awarding authority has received a demand for direct payment from a subcontractor for any amount which has already been included in a payment to the general contractor or which is to be included in a payment to the general contractor for payment to the subcontractor as provided in subparagraphs (1) and (2) the awarding authority shall act upon the demand as provided in this section.

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

(e) Within fifteen days after receipt of the demand by the awarding authority, but in no event prior to the seventieth day after substantial completion of the subcontract work, the awarding authority 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 general contractor, less any amount (i) retained by the awarding authority 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 general contractor in the sworn reply; provided that the awarding authority shall not deduct from a direct payment any amount as provided in part (iii) if the reply is not sworn to, or for which the sworn reply does not contain the detailed breakdown required by subparagraph (d). The awarding authority shall make further direct payments to the subcontractor forthwith after the removal of the basis for deduction from direct payments made as provided in parts (i) and (ii) of this subparagraph.

(f) The awarding authority 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 general contractor and the subcontractor in a bank in Massachusetts selected by the awarding authority or agreed upon by the general contractor and the subcontractor and shall notify the general 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 general contractor and the subcontractor or as determined by decree of a court of competent jurisdiction.

(g) All direct payments and all deductions from demands for direct payments deposited in an interest bearing account or accounts in a bank pursuant to subparagraph (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 and out of amounts which later become payable to the general contractor and in the order of receipt of such demands from subcontractors. All direct payments shall discharge the obligation of the awarding authority to the general contractor to the extent of such payment.

(h) The awarding authority shall deduct from payments to a general 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 in such deductions prior to any claims against such amounts by creditors of the general contractor.

(i) If the subcontractor does not receive payment as provided in subparagraph (1) or if the general contractor does not submit a periodic estimate for the value of the labor or 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 general 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 seeks payment shall be valid even if delivered or mailed prior to the time payment was due on a periodic estimate from the general contractor. Thereafter the awarding authority shall proceed as provided in subparagraph (e), (f), (g) and (h)."

(2) Any assignment by a subcontractor of the rights under this section to a surety company furnishing a bond under the provisions of section twenty-nine of chapter one hundred forty-nine shall be invalid. The assignment and subrogation rights of the surety to amounts included in a demand for direct payment which are in the possession of the awarding authority or which are on deposit pursuant to subparagraph (6) shall be subordinate to the rights of all subcontractors who are entitled to be paid under this section and who have not been paid in full.

(3) "subcontractor" as used in this section (I) for contracts awarded as provided in sections forty-four A to forty-four L, inclusive, of chapter one hundred forty-nine shall mean a person who files a sub-bid and received a subcontract as a result of that filed sub-bid or who is approved by the awarding authority in writing as a person performing labor or both performing labor and furnishing materials pursuant to a contract with the general contractor, (ii) for contracts awarded as provided in paragraph (1) of section thirty-nine M of chapter thirty shall mean a person approved by the awarding authority in writing as a person performing labor or both performing labor and furnishing materials pursuant to a contract with the general contractor, and (iii) for contracts with the commonwealth not awarded as provided in sections forty-four A to forty-four L, inclusive, of chapter one hundred forty-nine shall also mean a person contracting with the general contractor to supply materials used or employed in a public works project for a price in excess of five thousand dollars.

(4) A general contractor or a subcontractor shall enforce a claim to any portion of the amount of a demand for direct payment deposit as provided in subparagraph (6) by a petition in equity in the superior court against the other and the bank shall not be a necessary party. A subcontractor shall enforce a claim for direct payment or a right to require a deposit as provided in subparagraph (6) by a petition in equity in the superior court against the awarding authority and the general contractor shall not be a necessary party. Upon motion of any party the court shall advance for speedy trial any petition filed as provided in this paragraph. Sections fifty-nine and fifty-nine B of chapter two hundred thirty-one shall apply to such petitions. The court shall enter an interlocutory decree upon which execution shall issue for any part of a claim found due pursuant to sections fifty-nine and fifty-nine B and, upon motion of any party, shall advance for speedy trial the petition to collect the remainder of the claim. Any party aggrieved by such interlocutory decree shall have the right to appeal therefrom as from a final decree. The court shall not consolidate for trial the petition of any subcontractor with the petition of one or more subcontractors or the same general Contract unless the court finds that a substantial portion of the evidence of the same events during the course of construction (other than the fact that the claims sought to be consolidated arise under the same general contract) is applicable to the petitions sought to be consolidated and that such consolidation will prevent unnecessary duplication of evidence. A decree in any such proceeding shall not include interest on the disputed amount deposited in excess of the interest earned for the period of any such deposit. No person except a subcontractor filing a demand for direct payment for which no funds due the general contractor are available for direct payment shall have a right to file a petition in court of equity against the awarding authority claiming a demand for direct payment is premature and such subcontractor must file the petition before the awarding authority has made a direct payment to the subcontractor and has made a deposit of the disputed portion as provided in part (iii) of subparagraph (5) and in subparagraph (6).

(5) In any petition to collect any claim for which a subcontractor has filed a demand for direct payment the court shall, upon motion of the general contractor, reduce by the amount of any deposit of a disputed amount by the awarding authority as provided in part (iii) of subparagraph (5) and in subparagraph (6) any amount held under a trustee writ or pursuant to a restraining order or injunction.”

7. Contracts for Public Works Governed by M.G.L. c. 30, § 39G.

The following statutory provision applies only to contracts for public works governed by M.G.L. c. 30, § 39G:

"Upon substantial completion of the work required by a Contract with the Owner, or any agency or political subdivision thereof, for the construction, reconstruction, alteration, remodeling, repair or improvement of public ways, including bridges, and other highway structures, sewers and water mains, airports and other public works, the contractor shall present in writing to the awarding authority its certification that the work has been substantially completed. Within twenty-one days thereafter, the awarding authority shall present to the contractor either a written declaration that the work has been substantially completed or an itemized list of incomplete or unsatisfactory work items required by the contract sufficient to demonstrate that the work has not been substantially completed. The awarding authority may include with such a list a notice setting forth a reasonable time, which shall not in any event be prior to the contract completion date, within which the contractor must achieve substantial completion of the work. In the event that the awarding authority fails to respond, by presentation of a written declaration or itemized list as

aforesaid, to the contractor's certification within the twenty-one day period, the contractor's certification shall take effect as the awarding authority's declaration that the work has been substantially completed.

Within sixty-five days after the effective date of a declaration of a substantial completion, the awarding authority shall prepare and forthwith send to the contractor for acceptance a substantial completion estimate for the quantity and price of the work done and all but one percent retainage of that undisputed part of each work item and extra work item in dispute but excluding the disputed part thereof, less the estimated cost of completing all incomplete and unsatisfactory work items and less the total periodic payments made to date for the work. The awarding authority also shall deduct from the substantial completion estimate an amount equal to the sum of all demands for direct payments filed by subcontractors and not yet paid to subcontractors or deposited in joint accounts pursuant to section thirty-nine F, but no Contract subject to said section thirty-nine F shall contain any other provision authorizing the awarding authority to deduct any amount by virtue of claims asserted against the contract by subcontractors, material suppliers or others.

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

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

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

hereunder on amounts for which interest is required to be paid in connection with the substantial completion estimate as hereinabove provided. The awarding authority shall include the amount of the interest required to be paid hereunder in the final estimate.

The awarding authority shall pay the amount due pursuant to any substantial completion or final estimate within thirty-five days after receipt of written acceptance for such estimate from the contractor and shall pay interest on the amount due pursuant to such estimate at the rate hereinabove provided from that thirty-fifth day to the date of payment. Within 15 days, 30 days in the case of the commonwealth, after receipt from the contractor, at the place designated by the awarding authority, if such place is designated, of a periodic estimate requesting payment of the amount due for the preceding periodic estimate period, the awarding authority shall make a periodic payment to the contractor for the work performed during the preceding periodic estimate period and for the materials not incorporated in the work but delivered and suitably stored at the Site, or at some location agreed upon in writing, to which the contractor has title or to which a subcontractor has title and authorized the contractor to transfer title to the awarding authority, upon certification by the contractor that he is the lawful owner and that the materials are free from all encumbrances. The awarding authority shall include with each such payment interest on the amount due pursuant to such periodic estimate at the rate herein above provided from the due date. In the case of periodic payments, the contracting authority may deduct from its payment a retention based on the estimate of the fair value of its claims against the contractor, a retention for direct payments to subcontractors based on demands for same in accordance with the provisions of section thirty-nine F, and a retention to secure satisfactory performance of the contractual work not exceeding five per cent of the approved amount of any periodic payment, and the same right to retention shall apply to bonded subcontractors entitled to direct payment under section thirty-nine F of chapter thirty; provided that a five per cent value of all items that are planted in the ground shall be deducted from the periodic payments until final acceptance.

No periodic, substantial completion or final estimate or acceptance or payment thereof shall bar a contractor from reserving all rights to dispute the quantity and amount of, or the failure of the awarding authority to approve a quantity and amount of, all or part of any work item or extra work item.

Substantial completion, for the purposes of this section, shall mean either that the work required by the contract has been completed except for work having a contract price of less than one percent of the then adjusted total contract price, or substantially all of the work has been completed and opened to public use except for minor incomplete or unsatisfactory work items that do not materially impair the usefulness of the work required by the contract”

8. Final Payment; Release of Claims by Contractor.

Upon Final Acceptance of the Work the Contractor shall be entitled to payment of the balance of the Contract Price. Final payment shall be as provided in this Article above and in accordance with any process set forth in the Contract Documents. The Contractor agrees to execute a Certificate of Final Inspection, Release and Acceptance in the form provided in Appendix C to these General Conditions to the Contract (with Contractor’s own exceptions listed thereon) as a condition precedent to final payment. The acceptance by the Contractor of the final payment made as aforesaid, or the execution of the “Certificate of Final Inspection, Release and Acceptance” (included in Appendix C to these General Conditions) by the Contractor, shall constitute a release of the Owner, the Awarding Authority, the Designer, and every member, officer, employee and agent of any of them, from all claims of

and liability to the Contractor for anything done or furnished for or relating to the Work, or for any act or neglect of the Owner, the Designer, or of any person relating to or affecting the Work, except the claim against the Owner or the Designer for the remainder, if any, of the amounts set forth by the Contractor in the “Certificate of Final Inspection, Release and Acceptance”. Final Acceptance shall not relieve Contractor of the requirements of Articles IX, XIV, and XV of these General Conditions, or of other provisions of this Contract, to the extent that the same are intended to survive Final Acceptance.

ARTICLE IX **GUARANTEES AND WARRANTIES**

1. General Warranty.

If at any time during the period of one (1) year from the date of the issuance of the Certificate of Substantial Completion by the Awarding Authority or the date of Final Acceptance, whichever occurs first, any part of such Work shall in the reasonable opinion of the Awarding Authority be defective or require replacing or repairing, or damage to other property of the Owner is caused by any defect in the Work, the Awarding Authority shall notify the Contractor in writing to make the required repairs or replacements and repair such damage. If the Contractor shall neglect to commence such repairs or replacements to the satisfaction to the Awarding Authority within ten (10) days from the date of the giving of such notice, then the Awarding Authority may employ other persons to make the same. The Contractor agrees, upon demand, to pay to the Awarding Authority all amounts which it expends for such repairs, replacements, and/or damages. During this one-year guarantee period, any corrective work shall be performed under all the applicable terms of this Contract,. This one-year guarantee shall not limit any express guaranty or warranty provided elsewhere in the Contract.

2. Special Guarantees and Warrantees.

- A.** The Contractor's obligation to correct Work as set forth in Article IX above is in addition to, and not in substitution of, such guarantees or warranties as may be required in the various sections of the Specifications.
- B.** Guarantees and warranties required in the various sections of the Specifications must be delivered to the Designer or, if directed by the Awarding Authority, to the Awarding Authority 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.
- C.** The failure to deliver a required guarantee or warranty shall constitute a failure to fully complete the Work in accordance with the Contract Documents.

ARTICLE X **MISCELLANEOUS LEGAL REQUIREMENTS.**

1. Contractor to be Informed.

The Contractor shall inform itself of all existing and future Laws in any manner affecting those engaged or employed in the Work, or the materials used or employed in the Work, or in a any way affecting the conduct of the Work, and of all orders and decrees of bodies or tribunals having any applicable jurisdiction or authority over the Work.

2. Compliance with all Laws.

The Contractor shall cause all persons employed in the performance of the Work to comply with, all existing and future Laws, including but not limited to those set forth below:

A. 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.

B. Workforce Certification: Certification of Compliance with Workforce Related Legal Requirements. The Contractor shall comply with the following legal requirements for any and all employees to be employed in the Project who are required to be listed in the certified payroll reports for the Project: 1) Federal Department of Homeland Security Requirements in hiring such employees including, but not limited to, the faithful completion of the Federal Department of Homeland Security Form I-9 process by the Contractor; 2) proper classification of individuals employed on the Project; 3) all Laws concerning workers' compensation insurance coverage, unemployment insurance, social security taxes, and income taxes; and 4) all Laws concerning hospitalization and medical benefits that meet the minimum requirements of the connector board established in M.G.L. c. 176Q. The Contractor shall execute a "Workforce Certification" form provided in Exhibit B to the Contract with the execution of this Contract. The Contractor shall require each Subcontractor and sub-Subcontractor working on the Project to execute and provide to Contractor such "Workforce Certification" form in the form provided in Exhibit B to the Contract with the execution of each subcontract, and Contractor shall immediately provide a copy to the Awarding Authority. The Contractor shall require each of its Subcontractors and sub-Subcontractors to execute and provide to Contractor such "Workforce Certification" form in the form provided in Exhibit B to the Contract with the execution of each subcontract, and the Contractor shall immediately provide a copy to the Awarding Authority. Contractor acknowledges that with the weekly workforce reports it must submit on a weekly basis, in the form and format required by the Awarding Authority, including, but not limited to, by electronic reporting through the requested means. Contractor and all Subcontractors must also report on gender, race/ethnicity of its workforce through the requested means, including the Awarding Authority's online workforce reporting system. Contractor and all Subcontractors on the Project are required to certify that the Form I-9 process was faithfully completed and that all other legal requirements related to its workforce referenced above were followed for all employees listed on each certified payroll report when submitted. The Contractor and all Subcontractors must: comply with the legal requirements of this section; must not knowingly use undocumented workers in connection with the performance of this Contract; pursuant to federal requirements must verify the immigration status of all workers assigned to the Contract without engaging in unlawful discrimination; and must not knowingly or recklessly alter, falsify, or accept altered or falsified documents from any such worker. Breach of any of the terms of the workforce certification legal requirements during the period of the Contract may be regarded as a material breach,

subjecting the Contractor and Subcontractors to sanctions, including but not limited to monetary penalties, withholding of payments, contract suspension or termination.

- C. Veterans and Other Preference.** In the employment of mechanics and apprentices, teamsters, chauffeurs, and laborers in the performance of Work in the Commonwealth, preference shall first be given to citizens of the Commonwealth who have been residents of the Commonwealth for at least six (6) months at the commencement of their employment and who are veterans as defined in M.G.L. c. 4, § 7(34), and who are qualified to perform the work to which the employment relates and, within such preference, preference shall be given to service-disabled veterans; and secondly, to citizens of the Commonwealth generally who have been residents of the Commonwealth for at least six (6) months at the commencement of their employment, and if they cannot be obtained in sufficient numbers, then to citizens of the United States.

The Awarding Authority encourages and monitors the participation of veteran business enterprises ("VBE") and service-disabled veteran-owned business enterprises ("SDVOBE") in its construction and design projects pursuant to Chapter 108 of the Acts of 2012 and Executive Order 565. The benchmark for combined SDVOBE and VBE participation on the Project is 3% of the Contract Price. For the Commonwealth's VBE and SDVOBE program purposes, a VBE or SDVOBE is a firm so certified directly by the Massachusetts Supplier Diversity Office ("SDO") www.mass.gov/sdo or is: 1) certified by a certifying agency that's certification is accepted by the SDO; 2) the firm has submitted its existing certification credentials directly to the SDO by submitting an application for verification of certification to the SDO; 3) the SDO has reviewed and granted the application for verification; and 4) the SDO has certified the firm as a VBE or SDVOBE for purposes of the Commonwealth's program as evidenced by a letter issued by the SDO to the firm. VBEs and SDVOBEs shall be provided opportunities to participate in the Project and Contractor shall within 30 days of Contract execution submit its "Anticipated Veteran Owned Business and Service-Disabled Veteran-Owned Business Enterprise Participation" plan to the Awarding Authority's Compliance Office. Contractor shall report on the amount of VBE and SDVOBE participation on the Project on a regular basis, in the form, format and frequency requested by the Awarding Authority, including, for DCAMM projects, through the requested means including the Awarding Authority's online compliance reporting system. The Commonwealth also encourages the participation of Portuguese Business Enterprises (PBE), Lesbian, Gay, Bisexual, and Transgender Business Enterprises (LGBTBE); and Disability-Owned Business Enterprises (DOBE) on its contracts.

- D. Prevailing Wages.** The Contractor shall comply with M.G.L. c. 149, §§ 26-27H. The prevailing wage schedule is found in Exhibit A to the "Instructions to Bidders" included in the public solicitation of bids for this Project, listing the prevailing minimum wage rates that must be paid to all workers employed in the Work. The Awarding Authority is not responsible for any errors, omissions, or misprints in said schedule. Such prevailing wage schedule shall continue to be the minimum rate wages payable to workers employed in the Work throughout the term of this Contract, subject to the exceptions provided in M.G.L. c. 149, §§ 26-27H. The Contractor shall not have any claim for extra compensation from the Owner if the actual wages paid to workers employed in the Work exceeds the rates listed on the schedule or as otherwise provided by Law. The Contractor shall cause a copy of said schedule to be kept in a conspicuous place at the Site during the term of the Contract. 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). In accordance with M. G. L. c. 149, §27 the Contractor shall obtain from the Awarding Authority annual updates to prevailing wage schedules for all public construction projects lasting longer than one year. The Contractor is required to obtain the

wage schedules from awarding authorities, and to pay no less than these rates to covered workers. The Contractor and all Subcontractors are required to anticipate such annual updated prevailing wage schedules and neither the Contractor nor any Subcontractors shall be entitled to claim additional compensation for base contract work due to updated prevailing wage schedules.

- E. Payroll Records and Statement of Compliance.** The Contractor shall comply and shall cause its Subcontractors to comply with M.G.L. c. 149, § 27B, which requires that a true and accurate record be kept of all persons employed on the Project for which the prevailing wage rates have been provided. The Contractor and all Subcontractors shall keep these records and preserve them for a period of three years from the date of completion of the Contract. Such records shall be open to inspection by any authorized representative of the Owner at any reasonable time, and as often as may be necessary. The Contractor shall, and shall cause its Subcontractors to, submit weekly certified copies of their weekly payroll records to the Awarding Authority at no additional expense to the Awarding Authority. The Awarding Authority may at all reasonable times audit such reports. DCAMM requires submission of weekly payroll reports and related information through DCAMM's online compliance reporting system. In addition, the Contractor and each Subcontractor shall furnish to the Executive Department of Labor within fifteen (15) days after completion of its portion of the Work a signed statement in the form required by the Awarding Authority.
- F. Vehicle operators.** If the Director of the Department of Labor and Workforce Development has established a schedule of wage rates to be paid to the operators of trucks, vehicles or equipment for the Work, 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).
- G. Eight Hour Day.** The Contractor shall comply with M.G.L. c. 149, §§ 30, 34 and 34A which provide that no laborer, workman, mechanic, foreman or inspector working within the Commonwealth in the employ 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 more than eight (8) hours in any one day or more than forty-eight (48) hours in any one week, or more than six (6) days in any one week, except in cases of extraordinary emergency.
- H. Timely Payment of Wages.** The Contractor shall comply with, and shall cause its Subcontractors to comply with M.G.L. c. 149, § 148 which requires the weekly or biweekly payment of employees within six (6) days of the end of the pay period during which wages were earned if employed for five or six days of a calendar week, and within other periods of time under certain circumstances as set forth therein.
- I. Lodging, etc.** The Contractor shall comply with, and shall cause its Subcontractors to comply with, M.G.L. c. 149, § 25 which provides that every employee under this Contract shall lodge, board and trade where and with whom he elects, and neither the Contractor nor his agents or employees shall, either directly or indirectly, require as a condition of the employment of any person that the employee shall lodge, board or trade at a particular place or with a particular person.
- J. Truck Rates.** The use by the Contractor of trucks or other motor vehicles hired from either common or contract motor carriers in the course of performance of this Contract is subject to such minimum rates and charges, and rules and regulations as may from time to time be promulgated by the Department of Public Utilities of the Commonwealth of Massachusetts or other agency of the State or Federal government which may be

authorized by Law to set rates or otherwise regulate the use of such vehicles. The Contractor expressly assumes the risk of any additional expense that may arise by reason of any change in such minimum rates and charges, and rules and regulations, and shall be entitled to no additional compensation or reimbursement by reason thereof.

K. Anti-Boycott Covenant (Executive Order 130). The Contractor warrants, represents and agrees that during the time this Contract is in effect, neither it or any affiliated company, as hereafter defined, participates in or cooperates with an international boycott, as defined in Section 999(b) (3) and (4) of the Internal Revenue Code of 1954, as amended, or engages in conduct declared to be unlawful by M.G.L. c. 151E, § 2. If there shall be a breach in the warranty, representation or agreement contained in this paragraph, then without limiting such other rights as it may have the Awarding Authority shall be entitled to rescind this Contract. As used herein, an affiliated company shall be any business entity of which at least 51% of the ownership interests are directly or indirectly owned by the Contractor or by a person or persons or business entity or entities directly or indirectly owning at least 51% of the ownership interests of the Contractor; or which directly or indirectly owns at least 51% of the Ownership interests of the Contractor.

L. Contractor's Agreements with Suppliers--Anti-Boycott Provisions.

- (1) The Contractor shall not purchase or rent any materials, equipment, machinery, vehicles, or supplies for or in connection with the Work from any person or entity who does not sign, under pains and penalties of perjury, a certificate that recites: "The undersigned warrants, represents and agrees that during the time its agreement with {insert contractor's name} is in effect for materials, supplies or equipment to be used in connection with the {insert the name of the Awarding Authority} Project No. {insert project number}, neither the undersigned or any affiliated company, as hereafter defined, participates in or cooperates with an international boycott, as defined in Section 999(b)(3) and (4) of the Internal Revenue Code of 1954, as amended, or engages in conduct declared to be unlawful by M.G.L. c.151E, § 2. As used herein, an affiliated company shall be any business entity of which at least 51% of the ownership interests are directly or indirectly owned by the undersigned or by a person or persons or business entity or entities directly or indirectly owning at least 51% of the ownership interests of the undersigned; or which directly or indirectly owns at least 51% of the ownership interests of the undersigned."
- (2) The Awarding Authority shall not be obligated to pay the Contractor for the cost of any materials, supplies, or equipment purchased or rented from any individual or entity from whom the Contractor has not previously obtained and delivered to the Awarding Authority the certificate that the previous paragraph requires. The Contractor will immediately terminate its contract with any supplier who breaches the warranty, representation and agreement contained in the previous paragraph.
- (3) The Contractor shall include in the Contractor's agreement with any person or entity from whom the Contractor intends to purchase or rent any materials, equipment, machinery, vehicles or supplies for or in connection with the Work: (a) a notice that this Contract obligates the Contractor to terminate the supply contract upon discovery of such breach of the sworn certificate delivered under subparagraph (1) above and such termination shall be without liability to the Contractor or the Awarding Authority; and (b) a provision which states: "The Governor or his designee, the secretary of administration and finance, and the state auditor or his designee shall have the right at reasonable times and upon reasonable notice to examine the books,

records and other compilations of the undersigned vendor which pertain to the performance and requirements of this agreement to provide materials of any nature to the undersigned contractor in connection with State Project No. (insert project number)."

- M. Access to Contractor's Records (Executive Order 195).** The Governor of the Commonwealth or his/her designee, the secretary of administration and finance, and the state auditor or his/her designee shall have the right at reasonable times and upon reasonable notice to examine the books, records and other compilations of data of the Contractor which pertain to the performance and requirements of this Contract.
- N. Northern Ireland (M.G.L. c. 7, § 22C).** Pursuant to M.G.L. c. 7, § 22C for state agencies, state authorities, the House of Representatives or the state Senate, the Contractor certifies that it does not employ ten (10) or more employees in an office or other facility in Northern Ireland and if the Contractor employs ten (10) or more employees in an office or other facility located in Northern Ireland the Contractor certifies that it does not discriminate in employment, compensation, or the terms, conditions and privileges of employment on account of religious or political belief; and it promotes religious tolerance within the work place, and the eradication of any manifestations of religious and other illegal discrimination; and the Contractor is not engaged in the manufacture, distribution or sale of firearms, munitions, including rubber or plastic bullets, tear gas, armored vehicles or military aircraft for use or deployment in any activity in Northern Ireland.
- O. Data Security Certifications.** For all contracts involving the Contractor's access to personal information, as defined in M.G.L. c. 93H, and personal data, as defined in M.G.L. c. 66A or access to agency systems containing such information or data, the Contractor certifies under the pains and penalties of perjury that the Contractor (a) has read M.G.L. c. 93H and c. 66A and agrees to protect any and all personal information and personal data; and (b) has reviewed all of the "Enterprise Information Security Policies and Standards" published by the Executive Office for Technology Services and Security ("TSS"), or stricter standards prescribed by Owner. Notwithstanding any contractual provision to the contrary, in connection with the Contractor's performance under this Contract, for all state agencies in the Executive Department, including all offices, boards, commissions, agencies, departments, divisions, councils, bureaus, and offices, now existing and hereafter established, the Contractor shall:
- (1) obtain a copy, review, and comply with the pertinent security guidelines, standards and policies;
 - (2) comply with the "Enterprise Information Security Policies and Standards" published by TSS, or a comparable set of policies and standards ("Information Security Policy") as prescribed by the Owner;
 - (3) communicate and enforce such security guidelines, standards, policies and the applicable Information Security Policy among all employees (whether such employees are direct or contracted) and Subcontractors;
 - (4) implement and maintain any other reasonable appropriate security procedures and practices necessary to protect personal information and data to which the Contractor is given access by the Awarding Authority from the unauthorized access, destruction, use, modification, disclosure or loss;
 - (5) be responsible for the full or partial breach of any of these terms by its employees (whether such employees are direct or contracted) or Subcontractors during or after

the term of this Contract, and any breach of these terms may be regarded as a material breach of this Contract;

- (6) in the event of any unauthorized access, destruction, use, modification, disclosure or loss of the personal information or personal data (collectively referred to as the "unauthorized use"): (a) immediately notify the Awarding Authority if the Contractor becomes aware of the unauthorized use; (b) provide full cooperation and access to information necessary for the Awarding Authority to determine the scope of the unauthorized use; and (c) provide full cooperation and access to information necessary for the Awarding Authority and the Contractor to fulfill any notification requirements.

Breach of these terms may be regarded as a material breach of this Contract, such that the Commonwealth may exercise any and all contractual rights and remedies, including without limitation indemnification, withholding of payments, Contract suspension, or termination. In addition, the Contractor may be subject to applicable statutory or regulatory penalties, including and without limitation, those imposed pursuant to M.G.L. c. 93H and under M.G.L. c. 214, § 3B for violations under M.G.L. c. 66A.

ARTICLE XI **CONTRACTOR'S ACCOUNTING METHOD REQUIREMENTS** **(M.G.L. c. 30, § 39R)**

1. Definitions.

The words defined herein shall have the meaning stated below whenever they appear in this Article XI:

"Independent Certified Public Account" 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. In determining whether an accountant is independent with respect to a particular person, appropriate consideration should be given to all relationships between the accountant and that person or any affiliate thereof. Determination of an accountant's independence shall not be confined to the relationships existing in connection with the filing of reports with the Awarding Authority.

"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.

"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 or other person or persons primarily responsible for the financial and operational policies and practices of the Contractor.

Accounting terms, unless otherwise defined herein, shall have a meaning in accordance with generally accepted accounting principles and auditing standards.

2. Record Keeping.

- A.** The Contractor shall make, and keep for at least six (6) years after final payment, books, records, and accounts that in reasonable detail accurately and fairly reflect the transactions and dispositions of the Contractor.
- B.** Until the expiration of six (6) years after final payment, the Inspector General, DCAMM, and the Awarding Authority 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.
- C.** The Contractor shall describe any change in the method of maintaining records or recording transactions which materially affects any statements filed with the Awarding Authority including the date of the change and reasons therefor, and shall accompany said description with a letter from the Contractor's independent certified public accountant approving or otherwise commenting on the changes.
- D.** The Contractor represents that it has, prior to the execution of the Contract, filed a statement of management on internal accounting controls as set forth in Article XI.3 below.
- E.** The Contractor represents that it has, prior to the execution of the Contract, filed an audited financial statement for the most recent completed fiscal year as set forth in Article XI.4 below and will continue to file such statement annually during the term of the Contract.

3. Statement of Management Controls.

- A.** The Contractor shall file with the Awarding Authority 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.
- B.** The Contractor shall file with the Awarding Authority 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:
 - (1) whether the representations of management in response to Article XI.3 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.

4. Annual Financial Statement.

- A. The Contractor shall annually file with DCAMM during the term of the Contract a financial statement prepared by an independent certified public accountant based on 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.
- B. The office of Inspector General and DCAMM shall have the right to enforce the provisions of this Article. A Contractor's failure to satisfy any of the requirements of this section may be grounds for debarment pursuant to M.G.L. c. 149, § 44C.

5. Bid Pricing Materials.

The Contractor shall save the written calculations, pricing information, and other data that the Contractor used to calculate the bid that induced the Awarding Authority to enter into this Contract (the "Bid Pricing Materials") for at least six (6) years after the Awarding Authority makes final payment under this Contract.

ARTICLE XII
**EQUAL EMPLOYMENT OPPORTUNITY, NON-DISCRIMINATION
 AND AFFIRMATIVE ACTION PROGRAM.**
 [EXECUTIVE ORDERS 524 & 565] (See Appendix A)

This Contract includes the provisions of the Awarding Authority's "Equal Employment Opportunity, Non-Discrimination, and Affirmative Action Program" attached as Appendix A to these General Conditions and incorporated herein by reference.

ARTICLE XIII
**GOALS FOR PARTICIPATION BY MINORITY BUSINESS
 ENTERPRISES AND WOMEN BUSINESS ENTERPRISES**
 [M.G.L. c. 7C, § 6 & EXECUTIVE ORDERS 524 & 565]

This Contract includes the provisions of the Awarding Authority's program relating to "Goals for Participation by Minority Business Enterprises and Women Business Enterprises" attached as Appendix B to these General Conditions and incorporated herein by reference.

ARTICLE XIV
INSURANCE REQUIREMENTS

1. Insurance Generally.

- A. The Contractor shall purchase and maintain insurance of the type and limits listed in this Article with respect to the operations as well as the completed operations 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 or for such longer period as this Article requires.
- B. All policies shall be written on an occurrence basis and be issued by companies lawfully authorized to write that type of insurance under the laws of the Commonwealth with a financial strength rating of "A-" or better as assigned by AM Best Company, or an equivalent rating assigned by a similar rating agency acceptable to the Awarding Authority, or otherwise acceptable to the Awarding Authority.
- C. Contractor shall submit each certificate of insurance, acceptable to the Awarding Authority, simultaneously with the execution of this Contract. Certificates shall show each type of insurance, insurance company, policy number, amount of insurance, deductibles and/or

self-insured retentions, and policy effective and expiration dates. Certificates shall show the Awarding Authority, the Owner and anyone else the Awarding Authority requests as an additional insured as to all policies of liability insurance. Certificates shall specifically note the following:

- (1) that the general liability policy includes contractual liability.
- (2) that the general liability policy includes the Owner and Awarding Authority as additional insureds for ongoing operations (CG 20 10) and for completed operations (CG 37 10) or equivalent endorsements.
- (3) that the automobile liability, umbrella liability and pollution liability policies include the Owner and Awarding Authority as an additional insured;
- (4) that the general liability policy includes endorsement CG 24 04 or equivalents, a waiver of subrogation in favor of the Owner and Awarding Authority.
- (5) that the builders' risk or installation floater is on an all risk basis including earthquake and flood, and includes the Awarding Authority, Owner, Contractor, Subcontractors and suppliers of any tier as a named insured or loss payee as their interests may appear; and
- (6) that none of the coverages shall be cancelled, terminated, or materially modified unless and until thirty (30) days prior notice is given in writing to the Awarding Authority.

Contractor shall submit updated certificates prior to the expiration of any of the policies referenced in the certificates so that the Awarding Authority shall at all times possess certificates indicating current coverage.

- D. The Contractor shall file one certified complete copy of all policies and endorsements with the Awarding Authority within sixty (60) days after Contract award. If the Awarding Authority is damaged by the Contractor's failure to maintain such insurance and to comply with the terms of this Article, then the Contractor shall be responsible for all costs and damages to the Awarding Authority attributable thereto.
- E. Termination, cancellation, or material modification of any insurance required by this Contract, whether by the insurer or the insured, shall not be valid unless written notice thereof is given to the Awarding Authority at least thirty(30) days prior to the effective date thereof, which shall be expressed in said notice.
- F. The Contractor is responsible for the payment of any and all deductibles under all of the insurance required below. The Awarding Authority shall not in any instance be responsible for the payment of deductibles, self-insured retentions, or any portion thereof.

2. Contractor's Commercial General Liability.

- A. The Contractor shall purchase and maintain general liability coverage on the ISO form CG 00 01 or equivalent, including products and completed operations, on an occurrence basis. The form must be amended to state that the aggregate limit applies on a per location/project basis. The policy shall provide the following minimum coverage to protect the Contractor from claims with respect to the operations performed by Contractor and any employee, Subcontractor, or supplier, or by anyone for whose acts they may be liable unless a higher coverage is specified in Exhibit A to the Contract, in which case the Contractor shall provide the additional coverage:

Bodily Injury & Property Damage	\$1,000,000 each occurrence
Products & Completed Operations	\$2,000,000 general aggregate per project
Personal & Advertising Injury	\$1,000,000 annual aggregate
Medical Expenses	\$1,000,000 each occurrence
	\$10,000

- B. This policy shall include coverage relating to explosion, collapse, and underground property damage.
- C. This policy shall include contractual liability coverage.
- D. The completed operations coverage shall be maintained for a period of three (3) years after Substantial Completion and acceptance by the Awarding Authority. The Contractor shall provide renewal certificates of insurance to the Awarding Authority as evidence that this coverage is being maintained.
- E. If the Work includes work to be performed within 50 feet of a railroad, any exclusion for liability assumed under contract for work within 50 feet of a railroad shall be deleted.
- F. This policy shall include the Awarding Authority, the Owner and anyone else requested by the Awarding Authority as an additional insured via endorsements CG 20 10 for ongoing operations and CG 20 37 for completed operations. This policy shall be primary and non-contributory with respect to any other insurance available to additional insureds.
- G. The policy shall include endorsement CG 24 04, a waiver of subrogation in favor of the Awarding Authority and Owner.

3. Automobile Liability.

- A. The Contractor shall purchase and maintain the following minimum coverage with respect to the operations of any owned, non-owned, and hired vehicles including trailers used in the performance of the work, unless a higher coverage is specified in Exhibit A to the Contract, in which case the Contractor shall provide the additional coverage:

Bodily Injury & Property Damage \$1,000,000 combined single limit

- B. The policy shall include a CA 99 48 Broadened Pollution Endorsement. If specified in Exhibit A to the Contract, the Contractor, if hauling contaminants and/or pollutants, must adhere to Sections 29 and 30 of the Motor Carrier Act of 1980, which shall include coverage Form MCS-90.
- C. The policy shall name the Awarding Authority and Owner as additional insureds.
- D. The policy shall contain a waiver of subrogation in favor of the Awarding Authority and Owner.

4. Contractor's Pollution Liability.

The Contractor shall purchase and maintain coverage for bodily injury and property damage resulting from liability arising out of pollution related exposures such as asbestos abatement, lead paint abatement, tank removal, removal of contaminated soil, etc. The insurance policy shall cover the liability of the Contractor during the process of removal, storage, transport and disposal of hazardous waste and contaminated soil and/or asbestos abatement. The policy shall include coverage for on-Site and off-Site bodily injury and loss of, damage to, or loss of use of

property, directly or indirectly arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gas, waste materials or other irritants, contaminants or pollutants into or upon the land, the atmosphere or any water course or body of water, whether it be gradual or sudden and accidental. The policy shall also include defense and clean-up costs. The Awarding Authority and Owner shall be named as an additional insureds and coverage must be on an occurrence basis. The amount of coverage shall be as follows unless a higher amount is specified in Exhibit A to the Contract, in which case the Contractor shall provide the additional coverage:

Limit of liability	\$1,000,000 per occurrence
	\$3,000,000 aggregate

5. Worker's Compensation.

A. The Contractor shall provide the following coverage in accordance with M.G.L. c.149, § 34A and c. 152, as amended, unless a higher coverage is specified in Exhibit A to the Contract, in which case the Contractor shall provide the higher coverage:

Worker's Compensation	Statutory limits
Employer's Liability	\$ 500,000 each accident
	\$ 500,000 disease per employee
	\$ 500,000 disease policy aggregate

B. If specified in Exhibit A to the Contract the policy must be endorsed to cover United States Longshoremen & Harborworkers Act (USLHW), Maritime Liability for \$1,000,000/\$1,000,000 or Federal Employer’s Liability Act liability.

C. The policy shall contain a waiver of subrogation in favor of the Awarding Authority and Owner.

6. Builder's Risk/ Installation Floater/Stored Materials.

A. The Contractor shall purchase and maintain coverage against loss or damage on all Work included in this Contract in an amount equal to the Contract Price. Such coverage shall be written on an all risks basis or equivalent form and shall include, without limitation, insurance against perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, terrorism (“certified” and “non-certified”), collapse, earthquake, flood (if the project is not in an "A" or a "V" flood zone), windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Designer’s and Contractor's services and expenses required as a result of such insured loss. Unless otherwise specified in this Contract, the limits for earthquake and flood shall be the lesser of the Contract Price or \$10,000,000. This policy and/or installation floater shall include transportation and stored materials coverage in an amount equal to the value of the stored materials as required in Article XIV.6.C. below.

B. 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 Price. Such coverage shall be written on an all risks basis or equivalent form and shall include, without limitation, insurance against perils of fire (with extended coverage) and physical loss or

damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood (if the project is not in an "A" or a "V" flood zone), windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Designer's and Contractor's services and expenses required as a result of such insured loss. Unless otherwise specified in this Contract, the limits for earthquake and flood shall be the lesser of the Contract Price or \$10,000,000. This policy and/or installation floater shall include transportation and Stored Materials coverage in an amount equal to the value of the stored materials as required in Article XIV.6.C. below.

- C. The Contractor shall maintain insurance on delivered and/or stored material designated to be incorporated in the Work against fire, theft or other hazards. Any loss or damage of whatever nature to such material while stored at an off -Site location shall be forthwith replaced by the Contractor at no expense to the Awarding Authority.
- D. The policy or policies shall specifically state that they are for the benefit of and payable to the Awarding Authority, the Owner, the Contractor, Subcontractors, and all persons furnishing labor or labor and materials for the Work, as their interests may appear. The policy or policies shall list the Awarding Authority, the Owner, the Contractor, and Subcontractors of any tier as named insureds.
- E. Coverage shall include any costs for work performed by the Designer or any consultant as the result of a loss experienced during the term of this Contract.
- F. Coverage shall include permission for temporary occupancy and a waiver of subrogation in favor of the Awarding Authority and Owner
- G. Coverage shall be maintained until Final Acceptance by the Awarding Authority and Owner of the Contract and final payment has been made.
- H. A loss under the property insurance shall be adjusted by the Contractor as fiduciary and made payable to the Contractor as fiduciary for the insureds. The Contractor shall pay the Subcontractors their just shares of insurance proceeds received by the Contractor and shall require Subcontractors to make payments to their sub-Subcontractors in similar manner.

7. Umbrella Coverage.

The Contractor shall provide umbrella coverage in a form at least as broad as primary coverages required by subparagraphs 2, 3 and 5 of this Article in the following amount unless a higher amount is specified in Exhibit A to the Contract, in which case the Contractor shall provide the higher amount:

<u>Contract Price:</u>	<u>Limit of Liability:</u>
Under \$1,000,000	\$2,000,000 per occurrence
\$1,000,001 -- \$5,000,000	\$5,000,000 per occurrence
\$5,000,001-- \$10,000,000	\$10,000,000 per occurrence
\$10,000,001 and over	\$25,000,000 per occurrence

8. Additional Types of Insurance.

The Contractor shall provide such other types of insurance as may be required by Exhibit A to the Contract.

ARTICLE XV
INDEMNIFICATION

1. Generally.

To the fullest extent permitted by law, the Contractor shall indemnify, defend (with counsel appointed as a Special Assistant Attorney General and subject to the supervision of the Attorney General of the Commonwealth of Massachusetts as required by M.G.L. c. 12, § 3) and hold harmless the Owner, Awarding Authority and Designer and their officers, agents, divisions, agencies, employees, representatives, successors and assigns from and against all claims, damages, losses and expenses, including but not limited to court costs and attorneys' fees, arising out of or resulting from the performance of the Work, including but not limited to those arising or resulting from: labor performed or furnished and/or materials used or employed in the performance of the Work; violations by Contractor, any Subcontractor, or by any person directly or indirectly employed or used by any of them in the performance of the Work (including, without limitation, suppliers) or anyone for whose acts any of them may be liable (Contractor, Subcontractor and all such persons herein collectively called "Contractor's Personnel") of any Laws; violations of any provision of this Contract by any of Contractor's Personnel; injuries to any persons or damage to any property in connection with the Work; any act, omission, or neglect of Contractor's Personnel.

The Contractor shall be obligated as provided above, regardless of whether or not such claims, damages, losses and/or expenses, are caused in whole or in part by the actions or inactions of a party indemnified hereunder. In any and all claims by Contractor's Personnel against parties indemnified hereunder, the Contractor's indemnification obligation set forth above shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Article XV.

2. Designer's Actions.

The obligations of the Contractor under Section 1 above shall not extend to the liability of the Designer, its agents or employees, arising out of (i) the preparation or approval of maps, Drawings, opinions, reports, surveys Change Orders, designs, or Specifications, or (ii) the giving of or the failure to give directions or instructions by the Designer, its agents or employees provided such giving or failure to give is the primary cause of the injury or damage.

3. Survival.

The provisions of this Article XV are intended to survive Final Acceptance and/or any termination of this Contract.

ARTICLE XVI
PERFORMANCE AND PAYMENT BONDS

1. Contractor Bonds.

- A.** The Contractor shall provide performance and payment (labor and materials) bonds in the form provided by the Awarding Authority, executed by a surety licensed by the Commonwealth of Massachusetts Division of Insurance and whose name appears on United States Treasury Department Circular 570. Each such bond shall be in the amount of the Contract Price.
- B.** If at any time prior to final payment to the Contractor, the Contractor's surety:
- (1) is adjudged bankrupt or has made a general assignment for the benefit of its creditors;
 - (2) has liquidated all assets and/or 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;
- then the Contractor shall, within twenty-one (21) days of any such action listed above, provide the Awarding Authority with new performance and payment bonds as described in Article XVI.1.A above. Such bonds shall be provided solely at the Contractor's expense.

2. Subcontractor Bonds.

- A.** If the Contractor provided in its General Bid that any or all filed Subcontractors shall provide the Contractor with payment and performance bonds for the full amount of their respective Subcontracts, then the costs for said bonds shall be the responsibility of the Contractor. Irrespective of whether the Contractor requests payment and performance bonds from their respective Subcontractors, the Contractor understands that if the Subcontractor defaults or is terminated, the Contractor shall have full responsibility for all costs and expenses related to said default or termination.
- B.** If the Contractor provided in its General Bid that filed Subcontractors shall provide bonds, and subsequently waives the requirement, the Contractor shall give the Awarding Authority a written certification that the Contractor understands that if the filed Subcontractor defaults or is terminated, the Contractor shall have full responsibility for all costs and expenses related to said default or termination and the Awarding Authority shall be entitled to a credit adjustment to the Contract Price in an amount equal to the bond premium Contractor would have paid had Contractor required the filed Subcontractor to provide such bonds. The Awarding Authority may, at its election, either issue a credit Change Order, withhold such amount from any payments due the Contractor and/or receive a payment from the Contractor for such amount.

ARTICLE XVII
TERMINATION OF CONTRACT

1. Termination for Cause.

- A.** The Awarding Authority may without prejudice to any other right or remedy deem this Contract terminated for cause if any of the following defaults shall occur and not be cured within three (3) days after the giving of notice thereof by the Awarding Authority to the Contractor and any surety that has given bonds in connection with this Contract:
- (1) The Contractor has filed a petition, or a petition has been filed against the Contractor with its consent, under any federal or state law concerning bankruptcy, reorganization, insolvency or relief from creditors, or if such a petition is filed against the Contractor without its consent and is not dismissed within sixty (60) days; or if the Contractor is generally not paying its debts as they become due; or if the Contractor becomes insolvent; or if the Contractor consents to the appointment of a receiver, trustee, liquidate, custodian or the like of the Contractor or of all or any substantial portion of its assets and such appointment or possession is not terminated within sixty (60) days; or if the Contractor makes an assignment for the benefit of creditors;
 - (2) The Contractor refuses or fails, except in cases for which extension of time is provided under this Contract's express terms, to supply enough properly skilled workers or proper materials to perform its obligations under this Contract, or the Awarding Authority as determined that the rate of progress required for the timely completion of the Work is not being met;
 - (3) The Contractor fails to make prompt payment to Subcontractors or for materials, equipment, or labor;
 - (4) All or a part of the Work has been abandoned;
 - (5) The Contractor has sublet or assigned all or any portion of the Work, the Contract, or claims thereunder, without the prior written consent of the Owner, except as expressly permitted in this Contract;
 - (6) The Contractor has failed to comply with Laws;
 - (7) The Contractor fails to maintain or provide to the Awarding Authority evidence of the insurance or bonds required by this Contract, or
 - (8) The Contractor has failed to prosecute the Work or any portion thereof as required under this Contract or has otherwise breached any material provision of this Contract.
- B.** The Awarding Authority shall give the Contractor and any surety notice of such termination for cause, but the giving of notice of such termination shall not be a condition precedent or subsequent to the termination's effectiveness. In the event of such termination, and without limiting any other available remedies, the Awarding Authority may, at its option:
- (1) hold the Contractor and its sureties liable in damages for a breach of Contract;
 - (2) 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;
 - (3) complete the Work, or any part thereof, and charge the expense of completing the Work or part thereof, to the Contractor;
 - (4) require the surety or sureties to complete the Work and perform all of the Contractor's obligations under this Contract;

- (5) take such other lawful action as is deemed by the Awarding Authority to be in the best interest of the Owner.

If the Awarding Authority elects to complete all or any portion of the Work as specified in Article XVII.1.B.(3) above, it may take possession of all materials, equipment, tools, machinery, implements at or near the Site owned by the Contractor and finish the Work at the Contractor's expense by whatever means the Awarding Authority may deem expedient; and the Contractor shall cooperate at its expense in the orderly transfer of the same to a new contractor or to the Awarding Authority as directed by the Awarding Authority. In such case, the Awarding Authority shall not make any further payments to the Contractor until the Work is completely finished. 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 Site after the Owner has no further use for them. Unless so removed within fifteen days after notice to the Contractor to do so, they may be sold at public auction, after publication of notice thereof at least twice in any newspaper published in the county where the Work is being performed, and the proceeds credited to the Contractor's account; or they may, at the option of the Awarding Authority, be stored at the Contractor's expense subject to a lien for the storage charges.

- C. Damages and expenses incurred under Article XVII.1.B above shall include, but not be limited to, costs for the Designer's extra services required, in the opinion of the Awarding Authority, to successfully inspect and administer the construction contract through Final Acceptance of the Work.
- D. Expenses charged under Article XVII.1.B above may be deducted and paid by the Awarding Authority out of any moneys then due or to become due the Contractor under this Contract.
- E. All sums damages, and expenses incurred by the Owner to complete the Work shall be charged to the Contractor. In case the damages and expenses charged are less than the sum that 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.

2. Termination For Convenience.

- A. The Awarding Authority may terminate this Contract for convenience even though the Contractor is not in default by giving notice to the Contractor specifying in said notice the date of termination.
- B. In case of such termination without cause, the Contractor shall be paid:
 - (1) all sums due and owing under this Contract through the date of termination, including any retainage withheld to the date of termination, less any amount which the Awarding Authority determines is necessary to correct or complete the Work performed to the date of termination; plus
 - (2) a reasonable sum to cover the expenses which Contractor would not have incurred but for the early termination of the Contract, such as demobilization of the work force, restocking charges, termination fees payable to Subcontractors.
- C. Lost profits shall not be payable. The payment provided in Article XVII.2.B above 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.

3. Contractor's Duties Upon Termination For Convenience.

Upon termination of this Contract for convenience as provided above in Article XVII.2, the Contractor shall: (1) stop the Work; (2) stop placing orders and subcontracts in connection with this Contract; (3) cancel all existing orders and subcontracts; (4) surrender the Site to the Awarding Authority in a safe condition; (5) transfer to the Awarding Authority all materials, supplies, work in process, appliances, facilities, equipment and machinery of this Contract, and all plans, Drawings, Specifications and other information and documents used in connection with this Contract.

ARTICLE XVIII **MISCELLANEOUS PROVISIONS**

1. No Assignment by Contractor.

The Contractor shall not assign by power of attorney or otherwise, or sublet or subcontract, the Work or any part thereof, without the previous written consent of the Awarding Authority and shall not, either legally or equitably, assign any of the moneys payable under this Contract, or Contractor's claims hereunder, unless with the like consent of the Awarding Authority, whether said assignment is made before, at the time of, or after the execution of the Contract. The Contractor shall remain responsible for satisfactory performance of all Work sublet or assigned. Consent of the Awarding Authority shall not be deemed to constitute a representation or waiver of any right hereunder by the Awarding Authority as to the qualifications or the responsibility of the Contractor or Subcontractor(s).

2. Non-Appropriation.

The Awarding Authority certifies that at the time of the execution of this Contract, sufficient appropriations exist and shall be encumbered to fund the Contract Price. Payments are subject to appropriation and shall be made only for work performed in accordance with the terms of this Contract. The Contractor shall not be obligated to perform and shall not perform work outside the scope of this Contract without an appropriate amendment to this Contract, and a sufficient appropriation(s) to support such additional work. The Awarding Authority may immediately terminate or suspend this Contract in the event that the appropriation(s) funding this Contract is eliminated or reduced to an amount which will be insufficient to support anticipated future obligations under this Contract. Such termination shall be deemed a termination for convenience subject to the provisions of Article XVII.2 of these General Conditions.

3. Claims by Others Not Valid.

No person other than the Contractor shall acquire any interest in this Contract or claim against the Awarding Authority or Owner hereunder, and no claim by any other person shall be valid except as provided in M.G.L. c. 30, § 39F.

4. No Personal Liability of Public Officials.

No public official, employee, or agent of the Awarding Authority or Owner shall have any personal liability for the obligations of the Awarding Authority or Owner set forth in this Contract.

5. Severability.

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

6. Choice of Laws.

This Contract shall be governed by the Laws of the Commonwealth of Massachusetts for all purposes, without regard to its Laws on choice of law. All proceedings under this Contract or related to the Project shall be brought in the courts of the Commonwealth of Massachusetts.

7. Standard Forms.

Unless directed otherwise in writing by the Awarding Authority, Contractor shall use the standard forms in use by Awarding Authority appearing in Appendix C to these General Conditions.

8. No Waiver of Subsequent Breach.

No waiver of any breach or obligation of this Contract shall constitute a waiver of any other or subsequent breach or obligation.

9. Remedies Cumulative.

All remedies of the Awarding Authority provided in this Contract shall be construed as cumulative and may be exercised simultaneously or in any order as determined by the Awarding Authority in its sole discretion. The Awarding Authority shall also be entitled as of right to specific performance and equitable relief including the right to an injunction against any breach of any of the provisions of this Contract.

10. Notices.

Notices to the Contractor shall be deemed given when hand delivered to the Contractor's temporary field office at or near the Site, or when deposited in the U.S. mail addressed to the Contractor at the Contractor's address specified in the Contract, or when delivered by courier to either location. Unless otherwise specified in writing by the Awarding Authority, notices and deliveries to the Awarding Authority shall be effective only when delivered to the Awarding Authority at the address specified in the Contract and date-stamped at the reception desk or for which a receipt has been signed by the agent or employee designated by the Awarding Authority to receive official notices.

11. Additional Information.

Recognizing that the Awarding Authority may find it necessary during the progress of the Work to establish the current status of performance under the Contract Documents, the Contractor shall, without limitation of any other requirements of the Contract Documents, promptly provide upon request statements, documents, or information to the Awarding Authority or others regarding the status of the Work, compliance of the Work with the Contract Documents, compliance by the Contractor or any Subcontractor with the Contract Documents, the names of Subcontractors or suppliers, amounts due or to become due, amounts previously paid to Subcontractors or suppliers, estimates of the portion of the Work completed and the cost of completing the Work, and such other matters within the scope of the Contractor's performance under the Contract Documents as the Awarding Authority may reasonably require.

12. Information Confidential.

Except as required for the discharge of its duties to the Awarding Authority under this Contract, or required by subpoena or court order, the Contractor and any of its Subcontractors agree to hold all information, documents, and materials obtained or developed in connection with its performance under this Contract (including, without limitation, all prints, plans, policies, procedures, studies, specifications and drawings, which relate to internal layout and structural elements, electrical and mechanical systems, security measures, emergency preparedness, threat or vulnerability assessments, and any other records relating to the security or safety of persons or buildings, structures, facilities, utilities, transportation or other infrastructure located within the Commonwealth) that the Contractor and any of its Subcontractors should reasonably know to be of a confidential or sensitive nature ("Confidential Information") in the strictest confidence, and shall not communicate, release, or disclose Confidential Information in any to any third party without the prior written Approval by the Awarding Authority. The Contractor shall not use any Confidential Information other than for the performance of the Work under this Contract. The Contractor shall inform all persons to whom any such Confidential Information has been or will be communicated, released, or disclosed of the privileged and confidential nature of Confidential Information, and shall ensure that all necessary steps are taken so that such Confidential Information is treated confidentially. Without limiting the foregoing, if the Project is a designated "Security Sensitive Information" project, the Contractor shall execute separate "Security Sensitive Information Procedures" and confidentiality agreements and shall comply with such document protection requirements as may be referenced in said agreement.

13. Consequential Damages.

In no event shall DCAMM be liable to the Contractor except for obligations expressly assumed by the Awarding Authority or the Designer under the Contract Documents, nor shall the Awarding Authority ever be liable to the CM for indirect, special or consequential damages.

14. Conflict of Interest.

The Contractor shall familiarize its employees assigned to perform services under this Contract with the provisions of M.G.L. c. 268A (the Massachusetts conflict-of-interest statute). The Contractor that the CM is an "interested party" for purposes of the aforementioned statute. Accordingly, if the Awarding Authority is a "state agency" for

purposes of the aforementioned statute, the Contractor and its employees and agents shall not offer or provide any employee of the Awarding Authority any gift, gratuity, favor, meal, entertainment, loan or other item of monetary value. The Contractor warrants and represents that it currently has no interest and shall not acquire any interest, direct or indirect, which would be adverse to or conflict in any manner with the performance of its services under this Contract or with the interest of the Awarding Authority or the Project. The Contractor further agrees that in the performance of this Contract no person or entity having any such adverse or conflicting interest shall be employed or granted a Subcontract. Except with the Awarding Authority's knowledge and express consent, the Contractor shall not engage in any activity, or accept any employment, interest or contribution that would reasonably appear to be adverse to the interests of the Awarding Authority or to compromise the Contractor's professional judgment with respect to the Project. The Contractor has a continuing obligation to divulge to the Awarding Authority all circumstances of its relationships with third parties, as well as any other interests that may have an effect on the Awarding Authority or the Project at the time of execution of this Contract or during its effectiveness. If the Awarding Authority believes that there is or has been a conflict of interest, or the appearance of a conflict of interest, it will so notify the Contractor. The Contractor shall make full disclosure of all material facts, and shall have a period of thirty (30) days after receipt of such notice to cure the conflict of interest or the appearance of conflict of interest, including the right to request a meeting with the Awarding Authority to explain its position. If the conflict of interest or appearance of conflict of interest is not cured to the satisfaction of the Awarding Authority or the controversy otherwise resolved prior to expiration of such thirty (30) days period, the Contractor shall be deemed to be in default of this Contract and the Awarding Authority may exercise any remedies available to it under this Contract or applicable law.

15. Sexual Harassment and Workplace Violence Prevention.

The Contractor shall promote a workplace that is free from sexual harassment and workplace violence, and to require all of its subcontractors to agree to the same. The Commonwealth does not tolerate sexual harassment, workplace violence, or a hostile work environment. It is the goal of the Commonwealth of Massachusetts to promote a workplace where people treat each other with dignity and respect. This applies to all Commonwealth employees, consultants, contractors and subcontractors regardless of tier, and covers actions within, by, among, and across these groups as they interact with each other. Without limiting its other rights and remedies of removal and/or termination, the Awarding Authority reserves the right to remove or terminate individuals and/or contractors whose conduct violates any of the provisions of this paragraph.

**END OF GENERAL CONDITIONS
APPENDICES APPEAR ON THE FOLLOWING PAGES**

APPENDIX A to General Conditions of the Contract

The following provisions form Article XII of the General Conditions of the Contract where DCAMM is the Awarding Authority.

EQUAL EMPLOYMENT OPPORTUNITY, NON-DISCRIMINATION AND AFFIRMATIVE ACTION PROGRAM.

1. Compliance Generally.

For purpose of this Article, "minority" refers to Asians, Blacks, Western Hemisphere Hispanics, Native Americans, and Cape Verdeans; "Commission" refers to the Massachusetts Commission Against Discrimination. During the performance of this Contract, the Contractor and all of its Subcontractors (hereinafter collectively referred to as the Contractor) shall comply with all applicable equal employment opportunity, non-discrimination and affirmative action requirements, including but not limited to the following:

2. Non-Discrimination and Affirmative Action.

A. The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, ancestry, sex, gender identity, sexual orientation, age, handicap, mental illness, genetic information or active military duty. 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. The Contractor shall comply with the provisions of M.G.L. c.151B and all other applicable anti-discrimination and equal opportunity laws.

B. The Contractor shall comply with the provisions of Executive Order 526, entitled Order Regarding Nondiscrimination, Diversity, Equal Opportunity and Affirmative Action, which prohibits unlawful discrimination based on race, color, age, gender, ethnicity, sexual orientation, gender identity or expression, religion, creed, ancestry, national origin, disability, veteran's status (including Vietnam-era veterans), or background. Executive Order 526 is herein incorporated by reference and made a part of this Contract.

Pursuant to Executive Order 526 the Contractor and any subcontractors may not engage in discriminatory employment practices; and the Contractor must certify that it is in compliance with all applicable federal and state laws, rules, and regulations governing fair labor and employment practices; and commit to purchasing supplies and services from certified minority or women-owned businesses, small businesses, or businesses owned by socially or economically disadvantaged persons or persons with disabilities. These provisions shall be enforced through the contracting agency, the Operational Services Division, and/or the Massachusetts Commission Against Discrimination. Any breach shall be regarded as a material breach of Contract that may subject Contractor to appropriate sanctions.

C. In connection with the performance of the Work, the Contractor shall undertake in good faith affirmative action measures designed to eliminate any discriminatory barriers in the terms and conditions of employment on the grounds of race, color, religious creed, national origin, age, sexual orientation, 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, sexual orientation, or sex. A purpose of this provision is to ensure to the fullest

extent possible an adequate supply of skilled tradesmen for future public construction projects.

D. If the Contractor shall use any subcontractor on any work performed under this Contract, the Contractor shall take affirmative steps to negotiate with qualified minority and women subcontractors. These affirmative steps shall cover both pre-bid and post-bid periods. It shall include notification to the State Office of Minority and Women Business Assistance or its designee, while bids are in preparation, of all products, work or services for which the Contractor intends to negotiate bids. In all solicitations either by competitive bidding or negotiation made by the Contractor either for work to be performed under a subcontract or for the procurement of materials or equipment, each potential subcontractor or supplier shall be notified in writing by the Contractor of the Contractor's obligations under this Contract relative to non-discrimination and affirmative action.

E. As part of its obligation of remedial action under this Article, the Contractor shall maintain on this project not less than the percent ratio set forth in the Owner - Contractor Agreement of minority employee worker hours to total worker hours in each job category including but not limited to bricklayers, carpenters, cement masons, electricians, ironworkers, operating engineers, and those "classes of work" enumerated in M.G. L. c. 149, s. 44F.

G. In the hiring of minority journeypersons, apprentices, trainees and advanced trainees, the Contractor shall rely on referrals from a multi-employer affirmative action program approved by the Commission, traditional referral methods utilized by the construction industry, and referrals from agencies, not more than three in number at any one time, designated by the Liaison Committee or the Awarding Authority.

3. Liaison Committee, Reports and Records.

A. At the option of the Awarding Authority, there may be established for the term of this Contract a body to be known as the Liaison Committee. The Liaison Committee shall be composed of one representative each from the Awarding Authority, the Commission and such other representatives as may be designated by the Commission in conjunction with the Awarding Authority. The Contractor (or his agent, if any, designated by him as the on-Site equal employment opportunity officer) shall recognize the Liaison Committee as an affirmative action body, and shall establish a continuing working relationship with the Liaison Committee, consulting with the Liaison Committee on all matters related to minority recruitment, referral, employment and training.

B. The Contractor shall prepare projected staffing tables on a quarterly basis. These shall be broken down into projections, by week, of workers required in each trade. Copies shall be furnished one week in advance of the commencement of the period covered, and also when updated, to the Awarding Authority and Liaison Committee. The Contractor shall prepare weekly reports in a form approved by the Awarding Authority of hours worked in each trade by each employee, identified as minority or non-minority. Copies of these shall be provided at the end of each such week to the Awarding Authority and to the Liaison Committee.

C. Records of employment referral orders, prepared by the Contractor, shall be made available to the Awarding Authority and to the Liaison Committee on request.

D. A designee of the Awarding Authority and a designee of the Liaison Committee shall each have right to access to the Site.

E. The Contractor shall comply with the provisions of M.G.L. c. 151B as amended, of the Massachusetts General Laws, both of which are herein incorporated by reference and made a part of this Contract.

F. The Contractor shall provide all information and reports required by the Awarding Authority or the Commission on forms and in accordance with instructions issued by either

of them and will permit access to its facilities and any books, records, accounts and other sources of information which may be determined by the Awarding Authority or the Commission to affect the employment of personnel. This provision shall apply only to information pertinent to the Owner's supplementary affirmative action Contract requirements. 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 Awarding Authority or the Commission as appropriate and shall set forth what efforts he has made to obtain the information.

4. Sanctions.

A. Whenever the Awarding Authority, the Commission, or the Liaison Committee believes the Contractor or any Subcontractor may not be operating in compliance with the terms of this Article, the Commission shall directly, or through its designated agent, conduct an appropriate investigation, and may confer with the parties, to determine if such Contractor is operating in compliance with the terms of this Article. If the Commission or its agent finds the Contractor or any Subcontractor not in compliance, it may make a preliminary report on non-compliance, and notify such Contractor in writing of such steps as will in the judgment of the Commission or its agent bring such Contractor into compliance. In the event that such Contractor fails or refuses to fully perform such steps, the Commission **may** make a final report of non-compliance, and recommend to the Awarding Authority the imposition of one or more of the sanctions listed below. If, however, the Commission believes the Contractor or any Subcontractor has taken or is taking every possible measure to achieve compliance, it shall not make a final report of non-compliance. Within fourteen days of the receipt of the recommendations of the Commission, the Awarding Authority shall move to impose one or more of the following sanctions, as it may deem appropriate to attain full and effective enforcement:

- (1) The recovery by the Awarding Authority from the Contractor of 1/100 of 1% of the Contract award price or \$1,000 whichever sum is greater, in the nature of liquidated damages or, if a Subcontractor is in non-compliance, the recovery by the Awarding Authority from the Contractor, to be assessed by the Contractor as a back charge against the subcontractor, of 1/10 of 1% of the sub-Contract Price, or \$400 whichever sum is greater, in the nature of liquidated damages, for each week that such party fails or refuses to comply;
- (2) The suspension of any payment or part thereof due under the Contract until such time as the Contractor or any subcontractor is able to demonstrate his compliance with the terms of the Contract;
- (3) The termination or cancellation of the Contract, in whole, or in part, unless the Contractor or any Subcontractor is able to demonstrate within a specified time his compliance with the terms of the contract;
- (4) The denial to the Contractor or any subcontractor of the right to participate in any future contracts awarded by the Awarding Authority for a period of up to three years.

B. If at any time after the imposition of one or more of the above sanctions a Contractor is able to demonstrate that it is in compliance with this Article, the Contractor may request the Awarding Authority, in consultation with the Commission, to suspend the sanctions conditionally, pending a final determination by the Commission as to whether the Contractor is in compliance. Upon final determination of the Commission, the Awarding Authority, based on the recommendation of the Commission, shall either lift the sanctions or reimpose them.

C. Sanctions recommended by the Commission and enumerated under Section 4 above shall not be imposed by the Awarding Authority except after an adjudicatory proceeding, as that term is used M.G.L. c. 30A, has been conducted. No investigation by the Commission

or its agent shall be initiated without prior notice to the Contractor. **D.** Notwithstanding the provisions of 4A-4C above, if the Awarding Authority determines after investigation that the Contractor or any Subcontractor is not in compliance with the terms of this Article, it may suspend any payment or portion thereof due under the Contract until the contractor demonstrates to the satisfaction of the Awarding Authority compliance with the terms of this Article. This temporary suspension of payments by the Awarding Authority is separate from the sanctions set forth in Section 4A-4C of this Article above, which are determined by MCAD and recommend to the Awarding Authority. Payment may be suspended only after the Contractor and any other interested party shall have been given the opportunity to present evidence in support of its position at an informal hearing held by the Awarding Authority, and the Awarding Authority has concluded upon review of all the evidence that such penalty is justified. Payment shall not be suspended if the Awarding Authority finds that the Contractor made its best efforts to comply with this Article, or that some other justifiable reason exists for waiving the provisions of this Article in whole or in part.

END OF APPENDIX A

APPENDIX B to General Conditions of the Contract

The following provisions form Article XIII of the General Conditions of the Contract where DCAMM is the Awarding Authority.

GOALS FOR PARTICIPATION BY MINORITY BUSINESS ENTERPRISES AND WOMEN BUSINESS ENTERPRISES (M.G.L. c. 7C, § 6 and EXECUTIVE ORDERS 526 & 565)

1. Goals.

A. The goals for minority business enterprise and woman business enterprise participation established for this Contract are as set forth in the Owner - Contractor Agreement.

B. The Contractor and all Subcontractors, sub-subcontractors, and materials suppliers shall comply with all of the terms and conditions of this Article, which include the provisions pertaining to MBE/WBE participation set forth in the Owner - Contractor Agreement in order to meet the MBE/WBE participation goals established for this Contract.

2. MBE/WBE Participation Credit.

A. If the Contractor is itself an MBE or WBE, MBE or WBE participation credit shall be given in an amount equal to the entire Contract Price less the value of the work actually performed by other MBE or WBE firms on the Contract. If the Contractor is not an MBE or WBE, then MBE/WBE participation credit will be given for the value of the Work that is actually performed by each MBE or WBE subcontractor or sub-subcontractor.

B. If the Contractor is a joint venture with one or more MBE/WBE joint venturers, MBE/WBE participation credit shall be given to the joint venture as follows:

(1) If the joint venture is certified by the Massachusetts Supplier Diversity Office (SDO) as an MBE or WBE, MBE/WBE participation credit shall be given in an amount equal to the entire Contract Price.

(2) If the joint venture is not certified as an MBE or WBE by the SDO, MBE/WBE participation credit shall be given to the joint venture for the value of the Work that is performed by the MBE/WBE joint venturer(s), and for the value of the Work that is actually performed by each MBE or WBE subcontractor or sub-subcontractor.

C. If an MBE/WBE supplies but does not install equipment or materials, MBE/WBE participation credit shall be given only if the MBE/WBE supplier is regularly engaged in sales of equipment or supplies to the construction industry from an established place of business. MBE/WBE participation credit shall be given the full amount of the purchase order only if the MBE/WBE supplier manufactures the goods or substantially alters them before resale. In all other cases, MBE/WBE participation credit shall be given for 15% of the purchase order.

D. MBE participation credit shall be given for the work performed by MBEs only, and WBE participation credit shall be given for the work performed by WBEs only. MBE participation may not be substituted for WBE participation, nor may WBE participation be substituted for MBE participation.

3. Establishing MBE/WBE Status.

A. A minority owned business shall be considered an MBE only if it has been certified as a minority business enterprise by the Supplier Diversity Office (“SDO”).

B. A woman owned business shall be considered a WBE only if it has been certified as a woman business enterprise by SDO.

C. Certification as a disadvantaged business enterprise (“DBE”), certification as an MBE/WBE by any agency other than SDO, or submission of an application to SDO for certification as an MBE/WBE shall not confer MBE/WBE status on a firm for the purposes of this Contract. Please note that only firms SDO certified as MBE or WBEs can be credited toward meeting project MBE or WBE goals.

4. Subcontracts With MBE/WBEs.

Within thirty (30) days after the award of this Contract, the Contractor shall (i) execute a subcontract with each MBE/WBE Subcontractor which has executed a Letter of Intent Approved by the Awarding Authority, (ii) cause its Subcontractors to execute a sub-subcontract with each MBE/WBE sub-subcontractor they committed to utilize, and (iii) furnish the Awarding Authority with a signed copy of each such subcontract and sub-subcontract through DCAMM's Online Compliance Reporting System.

5. Performance of Contract Work by MBE/WBEs.

A. The Contractor shall not perform with its own organization, or subcontract or assign to any other firm, work designated to be performed by any MBE/WBE in the Letters of Intent or Schedule for MBE/WBE Participation without the prior written Approval of the Awarding Authority, nor shall any MBE/WBE assign or subcontract to any other firm, or permit any other firm to perform any of its MBE/WBE Work without the prior written Approval of the Awarding Authority. Any such unapproved assignment, subcontracting, sub-subcontracting, or performances of MBE/WBE Work by others shall be a change in the MBE/WBE Work for the purposes of this Contract. The Awarding Authority WILL NOT APPLY TO THE MBE OR WBE PARTICIPATION GOAL(S) ANY SUMS ATTRIBUTABLE TO SUCH UNAPPROVED ASSIGNMENTS, SUB-CONTRACTS, SUB-SUBCONTRACTS, OR PERFORMANCE OF MBE/WBE WORK BY OTHERS.

B. The Contractor shall be responsible for monitoring the performance of MBE/WBE Work to ensure that each scheduled MBE/WBE performs its own MBE/WBE Work with its own workforce.

C. The Contractor and each MBE/WBE shall provide the Awarding Authority with all information and documentation that the Awarding Authority determines is necessary to ascertain whether or not an MBE/WBE has performed its own MBE/WBE Work. At the discretion of the Awarding Authority, failure to submit such documentation to the Awarding Authority shall establish conclusively for the purpose of giving MBE/WBE participation credit under this Contract that such MBE/WBE did not perform such work.

6. Notification of Changes in MBE/WBE Work.

A. If at any time during the performance of the Contract the Contractor determines or has reason to believe that a scheduled MBE/WBE is unable or unwilling to perform its MBE/WBE Work, or that there has been or will be a change in any MBE/WBE Work, or that the Contractor will be unable to meet the MBE/WBE participation goal(s) for this Contract for any reason, the Contractor shall immediately notify the Awarding Authority Contract Compliance Office in writing of such circumstances.

B. Any notice of a change in MBE/WBE Work pursuant to subparagraph “A” above shall include a revised Schedule for MBE/WBE Participation, and additional or amended Letters of Intent and subcontracts, as the case may be.

7. Actions Required If There is a Reduction in MBE/WBE Participation.

A. In the event there is a change or reduction in any MBE/WBE Work which will result in the Contractor failing to meet the MBE/WBE participation goal(s) for this Contract, other than a reduction in MBE/WBE Work resulting from a Change Order initiated by the Awarding Authority, then the Contractor shall immediately undertake a diligent, good faith effort to make up the shortfall in MBE/WBE participation as follows:

(1) The Contractor shall identify all items of the Work remaining to be performed under the Contract that may be made available for subcontracting to MBE/WBEs. The Contractor shall send a list of such items of work to the Awarding Authority, together with a list of the remaining items of the Work that were not made available to MBE/WBEs and the reason for not making such work available for subcontracting to MBE/WBEs.

(2) The Contractor shall send written notices soliciting proposals to perform the items of the Work that may be made available for subcontracting to MBE/WBEs to all MBE/WBEs qualified to perform such work. The Contractor shall advise the Awarding Authority of (i) each MBE/WBE solicited, and (ii) each MBE/WBE listed in the SDO directory under the applicable trade category who was not solicited and the reasons therefor. The Contractor shall also advise the Awarding Authority of the dates notices were mailed and provide a copy of the written notice(s) sent.

(3) The Contractor shall make reasonable efforts to follow up the written notices sent to MBE/WBEs with telephone calls or personal visits in order to determine with certainty whether the MBE/WBEs were interested in performing the work. Phone logs or other documentation must be submitted to the Awarding Authority evidencing this effort.

(4) The Contractor shall make reasonable efforts to assist MBE/WBEs that need assistance in obtaining insurance, bonds, or lines of credit in order to perform work under the Contract, and shall provide the Awarding Authority with evidence that such efforts were made.

(5) The Contractor shall provide the Awarding Authority with a statement of the response received from each MBE/WBE solicited, including the reason for rejecting any MBE/WBE who submitted a proposal, if applicable.

(6) The Contractor shall take any additional measures reasonably requested by the Awarding Authority to meet the MBE/WBE participation goal(s) established for this Contract, including, without limitation, placing advertisements in appropriate media and trade association publications announcing the Contractor's interest in obtaining proposals from MBE/WBEs, and/or sending written notification to MBE/WBE economic development assistance agencies, trade groups and other organizations notifying them of the project and of the work available to be subcontracted by the Contractor to MBE/WBEs.

B. If the Contractor is unable to meet the MBE/WBE participation goals for this Contract after complying fully with each of the requirements of paragraph “A” above, and the Contractor is otherwise in full compliance with the terms of this Article, the Awarding Authority may reduce the MBE/WBE participation goals for this Contract to the extent that such goals cannot be achieved.

8. Suspension of Payment and/or Performance for Noncompliance.

A. If at any time during the performance of this Contract, the Awarding Authority determines or has reason to believe that (1) there has been a change or reduction in any MBE/WBE Work which will result in the Contractor failing to meet the MBE/WBE

participation goal(s) for this Contract, other than a reduction in MBE/WBE Work resulting from a change in the Contract work ordered by the Awarding Authority, and (2) the Contractor has failed to comply fully with all of the terms and conditions of paragraphs 1 through 7 above, the Awarding Authority may:

(1) suspend payment to the Contractor of an amount up to the full value of the work which was to have been performed by an MBE/WBE pursuant to the Contractor's Schedule for MBE/WBE Participation but which was not so performed, in order to ensure that sufficient Contract funds will be available if liquidated damages are assessed pursuant to paragraph 9, and/or

(2) suspend the Contractor's performance of this Contract in whole or in part.

B. The Awarding Authority shall give the Contractor prompt written notice of any action taken pursuant to paragraph A above and shall give the Contractor and any other interested party, including any MBE/WBEs, an opportunity to present evidence to the Awarding Authority that the Contractor is in compliance with the requirements of this Article, or that there is some justifiable reason for waiving the requirements of this Article in whole or in part. The Awarding Authority may invite SDO and the Massachusetts Commission Against Discrimination to participate in any proceedings undertaken pursuant to this paragraph.

C. Upon a showing that the Contractor is in full compliance with the requirements of this Article, or that the Contractor has met or will meet the MBE/WBE participation goals for this Contract, the Awarding Authority shall release any funds withheld pursuant to clause A(1) above, and lift any suspension of the Contractor's performance under clause A(2) above.

9. Liquidated Damages; Termination.

A. If payment by the Awarding Authority or performance by the Contractor is suspended by the Awarding Authority as provided in paragraph 8 above, the Awarding Authority shall have the following rights and remedies if the Contractor thereafter fails to take all action necessary to bring the Contractor into full compliance with the requirements of this Article, or if full compliance is no longer possible because the default of the Contractor is no longer susceptible to cure, if the Contractor fails to take such other action as may be required by the Awarding Authority to meet the MBE/WBE participation goals set forth in this Contract:

(1) the Awarding Authority may terminate this Contract, and/or

(2) the Awarding Authority may retain from final payment to the Contractor, as liquidated damages, an amount equal to the difference between (x) the total of the MBE/WBE participation goals set forth in this Contract, and (y) the amount of MBE/WBE participation credit given to the Contractor for MBE/WBE Work performed under this Contract as determined by the Awarding Authority, the parties agreeing that the damages for failure to meet the M/BE/WBE participation goals are difficult to determine and that the foregoing amount to be retained by the Awarding Authority represents the parties' best estimate of such damages. Any liquidated damages will be assessed separately for MBE and WBE participation.

B. Before exercising its rights and remedies hereunder, the Awarding Authority may, but the Awarding Authority shall not be obligated to, give the Contractor and any other interested party another opportunity to present evidence to the Awarding Authority that

the Contractor is in compliance with the requirements of this Article or that there is some justifiable reason for waiving the requirements of this Article in whole or in part. The Awarding Authority may invite SDO and the Massachusetts Commission Against Discrimination to participate in any proceedings undertaken hereunder.

10. Reporting Requirements.

The Contractor shall submit to the Awarding Authority all information or documentation that is necessary in the judgment of the Awarding Authority to ascertain whether or not the Contractor has complied with any of the provisions of this Article.

11. Awarding Authority's Right to Waive Provisions of this Article in Whole or In Part.

The Awarding Authority reserves the right to waive any provision or requirement of this Article if the Awarding Authority determines that such waiver is justified and in the public interest. No such waiver shall be effective unless in writing and signed by a representative of the Awarding Authority's Compliance Office or the Office of its General Counsel. No other action or inaction by the Awarding Authority shall be construed as a waiver of any provision of this Article.

END OF APPENDIX B

APPENDIX C to the General Conditions of the Contract

INDEX OF REQUIRED CONTRACT ADMINISTRATION FORMS

(Forms used during bidding are located in Attachment B to the Instructions to Bidders)

- ~~Form of Subcontract MGL c.149 §44F~~
- ~~Procedure for Payment to Contractors~~
- ~~Payment Voucher Input~~
- ~~Requisition for Payment (DCAMM Form S1b) and Instructions~~
- Instructions and Procedures Regarding Change Orders, Contract Modifications and Equitable Adjustments (DCAMM Form 13)
- Request for Approval of Wages and Rates for Change Order Pricing (DCAMM Form 14)
- Format for Submission of Change Order (DCAMM Form 15) (3 pages)
- Change Order Log (1 Page)
- ~~Daily Time and Material Report for Change Orders 10/17 rev~~
- ~~Request and Agreement for a Change in the Plans~~
- Request and Agreement For Change In the Plans And/Or Specifications and/or Contract (DCAMM Form 5)
- Weekly Payroll Report Form and Statement of Compliance
- ~~Quarterly Projected Workforce Table~~
- ~~Veteran and Service Disabled Veteran Owned Business Enterprise~~
- ~~(VBE/SDVOBE) Participation~~
- ~~Form for Transfer of Title (Work Not Incorporated, DCAMM Form 16)~~
- Payroll & Workforce Report
- Payment Requisition Transmittal (3 pages)-
- ~~Submittal Transmittal (1 page)-~~
- Submittal Log
- Request for Information Transmittal (1 page)
- Request for Information Log
- ~~Weekly Site Meeting Template (1 Page)~~
- Certificate of Substantial Completion (E-1)
- Certificate of Final Inspection, Release and Acceptance (E-2)
- Certificate of Payment MBE, WBE, Veteran, Etc.
- Certificate of Payment to Subcontractors, Sub-bidders, suppliers

END OF APPENDIX C

DCAMM General Conditions of the Contract c. 149 Rev. 06/2020
DMH Revised 8/24/2021

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE FOR ADMINISTRATION AND FINANCE
DIVISION OF CAPITAL ASSET MANAGEMENT
ONE ASHBURTON PLACE, 15th Floor
BOSTON, MASSACHUSETTS 02108

**INSTRUCTIONS AND PROCEDURES REGARDING CHANGE ORDERS, CONTRACT
MODIFICATIONS AND EQUITABLE ADJUSTMENTS**

SECTION 1. STATUTORY AND CONTRACTUAL PROVISIONS

1.01 These procedures and instructions (hereinafter "Procedures") supplement Article VII of DCAMM's General Conditions of the Contract. These Procedures and Article VII are to be considered together and are intended to be mutually complementary, so that all terms are to be considered as part of this Contract. All provisions are intended to be consistent with the Massachusetts Laws governing Change Orders and Equitable Adjustments. Those laws include, but are not limited to: M.G.L. Chapter 7C, Sections 17-21; M.G.L. Chapter 30, Sections 39I, 39J, 39N, 39O, 39P, and 39Q. All parties must keep themselves informed of these laws and any amendments affecting said statutes.

NO CHANGES (ADDITIONS, SUBSTITUTIONS OR ELIMINATIONS) IN THE PLANS, SPECIFICATIONS OR CONTRACT SHALL BE COMMENCED UNTIL RECEIPT BY THE CONTRACTOR OF: (a) AN APPROVED DCAMM FORM 5 (Gold Sheet Change Order) OR (b) a WRITTEN DIRECTIVE from the DCAMM PROJECT MANAGER AUTHORIZING or DIRECTING such CHANGE. A Directive issued by the Deputy Commissioner, Director, or Deputy Director shall carry the same force as though issued by the Project Manager.

1.02 The purpose of these instructions and procedures is to provide additional detail for calculating equitable adjustments and outlining the change order submission process. The Contractor must provide satisfactory documentation supporting the nature and cost of each change, for an informed decision to be made on whether or not the change order is necessary, justified and priced properly. All parties that utilize the POTENTIAL CHANGE ORDER PROCESS explained in section 3 below, as well as maintain a POTENTIAL CHANGE ORDER LOG.

1.03 All requests for changes modifying the contract price must be submitted on DCAMM Form 5, prior to the final acceptance of the project. The Contractor waives all rights against the Commonwealth if it fails to comply with this requirement. DCAMM shall be under no obligation to process a request for change after final acceptance of the project.

1.04 The term "request for change" is used throughout these procedures and applies to every request to revise the contract requirements. The request for change must be made in writing, and in accordance with the provisions of the Contract, the General laws, rules, regulations and other procedures of DCAMM.

1.05 If the request for a change is deemed a Life Safety Issue by DCAMM, or if waiting for a formal change order approval will cause damage or increase the cost of the Work, the DCAMM Project Manager may deem the change "Urgent" and issue an email to the Contractor, Deputy Director, Designer, Resident Engineer and any other parties that are involved in the potential change. The email will outline the scope of work, a Not to Exceed dollar value, and a deadline for the paperwork to be submitted to substantiate the cost and completion of the work. The Contractor will add this "Urgent" Potential Change Order to the Log with a status of URGENT and proceed with the work in accordance with the email. If the costs to complete the "Urgent" work are expected to exceed the stated Not to Exceed value, then the Contractor shall advise the DCAMM Project Manager of the anticipated extra costs as soon as known, and shall await further written direction from DCAMM before proceeding with work above the Not to Exceed value.

1.06 Prior to any change order work being performed, the DCAMM Project Manager must have all quotes, estimates and potential costs identified to determine if the change order work should be performed as a lump sum cost to the project, or if the nature of the change is difficult to quantify, then it may be determined to perform the work on a Time and Material basis.

SECTION 2. DIRECTIONS FOR COMPUTING COSTS FOR CHANGES IN THE WORK

2.01 Construction Managers, General Contractors, Subcontractors, Sub-tier Subcontractors and service providers must submit for approval the DCAMM Wage Rate Form (Form 14) at the time their contract is awarded and prior to any change order work being started. DCAMM has changed the calculation for establishing **LABOR BILLING RATES**. Billing rates are calculated by taking the job specific **published** Prevailing Wage Rate for each trade classification and multiplying it by 1.40. Union Contractors may submit their collective bargaining agreement if there are excess fringe expenses over the published prevailing wage rate. These excess fringes will be applied with no mark-ups. The attached forms (as noted in Article VII) will automatically calculate rates as described. That rate calculation establishes the **LABOR BILLING RATE** for the project by trade and classification. If a contractor or subcontractor submits documentation from their insurance company that identifies their Workmen's Compensation rate is greater than 12.5% then the multiplier of 1.40 will be adjusted to include the percentage over 12.5%. For example, an Iron Worker's Workmen's compensation percentage is 14.5%; the calculation for that Trade's **LABOR BILLING RATE** would become 1.42 rather than 1.40. In the case of Premium Time, Time and Half, or Double Time DCAMM will accept a multiplier of 1.40 on the premium portion of wages over the approved prevailing wage rate only. These **LABOR BILLING RATES** are inclusive of overhead, profit, and all other expenses incurred. No additional markups on labor are allowed. If a credit is due to the project a percentage of 85% of the approved labor billing rate is to be credited to the project. The **LABOR BILLING RATES** will be established for each trade and classification at the beginning of the project. If there are any disputes regarding the **LABOR BILLING RATES** they must be resolved prior to change order work being started.

2.02 Equipment Schedules and associated rates must be submitted at the beginning of the project for any contractor that anticipates renting or using equipment as part of their scope of work for approval of desired rates to be used on change orders. If the contractor cannot provide an equipment schedule, including established rates, DCAMM has elected to use *R.S. Means* to determine fair market value rates. When computing the cost of equipment the rate resulting in the lowest value (daily, weekly, monthly) is to be used. The Contractor can add 15% for overhead and profit mark up to the equipment rental cost as part of the final change order pricing. The allowance for overhead and profit shall be considered to include all additional expenses associated with hand and power tools normally required in the performance of the base bid work, "tools of the trade".

2.03 Back up for material costs is required and shall be a formal quote from the supplier providing the materials or an agreed upon industry standard determined at the beginning of the project, for example, NECA, MCCA, or Harrison. The Contractor may add 15% overhead and profit mark up to the material cost as part of the final change order pricing.

2.04 Miscellaneous Items and Services such as Police or Fire details, utility charges, and attic stock charges must be identified and estimated as part of the initial change request and back up for the cost is required. For any change that does not include labor performed, Equipment used, or materials installed in the project that results in a net increase in the contract price is considered a miscellaneous item or service. Shipping, handling and fuel surcharges must be estimated prior to orders being placed. Expedited shipping costs must be approved before an order is placed, otherwise normal shipping cost will be paid. The Contractor may add 5% for overhead and profit mark up to Miscellaneous Items and Services as part of the final change order pricing.

2.05 For changes that involve work performed by Subcontractors the Prime Contractor may add 5% markup on all subcontracted work. Subcontractors also shall be permitted to add 5% markup on all work subcontracted to Sub-tier subcontractors. Any work self-performed by either the Prime Contractor or Subcontractor is not subject to the additional 5% markup.

2.06 Travel expenses are only paid in accordance with Union Agreements or documented costs and no additional overhead and profit will be allowed on these costs. Travel will only be paid when requested on changes that result in additional time subject to the approval of the Project Manager on a case by case basis.

2.07 The General Contractor, Construction Manager, or Sub Contractor's (if applicable) bond premium shall be included at the following rates. If a Contractor's bond rate differs from this list verification from the bond carrier must be submitted showing the actual rates prior to any change order work starting on the Project.

	Contract Price	Rates per Thousand
(a)	Contracts up to \$500,000.....	\$14.40
(b)	\$500,000 to \$2,500,000.....	\$ 8.70
(c)	\$2,500,000 to \$5,000,000.....	\$ 6.90
(d)	\$5,000,000 to \$7,500,000.....	\$ 6.30
(e)	\$7,500,000 and up.....	\$ 5.76

2.08 Changes which involve Time and Material slips must have DCAMM Daily Time and Material Reports attached, verified, and signed by the Resident Engineer or authorized representative beginning on the day the work commences, and continuing every day work occurs thereafter until the work is complete. Timesheets verifying labor hours and classification
Form 13 – Instructions regarding change orders and contract modifications (rev. 10/2017)

and invoices verifying actual material cost from vendors are required when submitting the change to substantiate all costs being billed. Costs without back up will be deducted and not reimbursed.

2.09 The Project Manager may approve lump sum change order requests on changes costing \$2,000 or less, without requiring the Contractor to provide a detailed breakdown for the costs incurred on the change order. A basic level breakdown of Labor, material, and equipment on the contractors letterhead is still required.

SECTION 3. PROCESSING CHANGE REQUESTS AND EQUITABLE ADJUSTMENTS

3.01 Article VII of the Contract outlines the notification requirements for any potential change order. Time is of the essence with every potential change order and all parties, Contractors, Subcontractors, User Agency Representatives, Architect/Designer and DCAMM project team members are obligated by the Contract to expedite processing of these potential changes in an efficient and timely manner. The Prime Contractor must maintain a Potential Change Order (PCO) log for the entire project. A sample PCO log is included in the Contract Documents. The PCO log will be reviewed at each weekly Owner Meeting and have status changes updated in writing on a weekly basis.

3.02 If a request for a change has been identified, then the Prime Contractor must create a draft request for equitable adjustment referred to as a Change Order Request (COR) from their own project management system for review by the Architect/Designer and the DCAMM project team. The draft COR shall include requests for equitable adjustment from affected subcontractors, if any. The Prime Contractor's COR form must be approved in writing by the DCAMM project team prior to the first COR submission, otherwise the DCAMM Form 15 shall be used.

Each COR shall be for a specific scope of work and it shall be identified as an extra service with an explanation of reasons the change is not included in the base scope of work, such as; change in plans and specifications or other scope as outlined in Article VII. The Prime contractor shall also review each COR in accordance with Article VII of the Contract General Conditions. A COR may include multiple subcontractors for one scope of work, however all of their back up, including quotes, estimates and labor estimates must be attached to the COR for review. Having more than one COR for the same scope of work because subcontractors are late in submitting is not recommended, however there are times it is necessary. If a time extension to the contract is part of the change request, a critical path schedule from the Prime Contractor must be included in the COR. DCAMM requires all project schedules to be submitted in an electronic format as required by the Specifications of the project.

Each COR will be reviewed by the Architect/Designer, the Resident Engineer, and the Project Manager. If there is additional information required or a correction needs to be made a notification will be sent in a timely manner to the Prime Contractor with all parties copied. The Architect/Designer, Resident Engineer and Project Manager shall request any necessary additional information or corrections within 30 days of when the COR is submitted. If additional time is required to evaluate a COR, then the Contractor shall be notified within the same 30 days of the extended date by which a decision will be made. The Prime Contractor can resubmit the COR with the original COR number with an "R1" noted for the revision. This revision should be noted on the PCO log for tracking purposes and updated each time a revision is needed. No work shall begin until the COR is signed by all parties.

3.03 If the COR is complete and acceptable the Architect/Designer and DCAMM project team will advise the Prime Contractor of its acceptance consistent with section 3.05, below. Once the COR is accepted, the Prime Contractor is authorized to start the work and immediately initiate the formal Change Order ("The Gold Sheet"), Form 5, for billing purposes. Multiple signed CORs may be incorporated into one formal Change Order (Form 5) for approval; however, the original COR and all back up information must be provided. If the formal Change Order (Form 5) is incomplete or incorrect, the entire Change Order will be returned to the contractor. In such a case when multiple CORs are submitted together into one formal Change Order and the submission is either incomplete or incorrect, no single COR will be processed. Prime Contractors cannot bill for the work until a formal Change Order (Form 5) is signed by all parties and a double digit CO number is issued by the DCAMM Project Controls team. This number is to be displayed on the Schedule of Values with the change description when billing.

3.04 If the COR is not acceptable, all parties must work in good faith, and in a timely manner to resolve any issues prior to any work starting. If the issues cannot be resolved at the Project Manager or Deputy Director level within 30 days, a Project Executive from the Prime Contractor and the Director or Deputy Commissioner for Design and Construction will meet in order to reach final resolution. If the issues still cannot be resolved, the Project Manager may issue a unilateral Change Order and the Prime Contractor must commence work in accordance with Article VII of the Contract General Conditions and should refer to Article VII of the Contract General Conditions for performing work under protest and the dispute resolution process. This status will be updated on the PCO log and the Prime Contractor and DCAMM Project Team will continue to work to resolve the issues as outlined in Article VII.

3.05 The Architect/Designer and the Resident Engineer will provide written back up, either in an email or memorandum, approving the Prime Contractor's submitted COR and Form 5 Change Order. They are not required to sign the actual form submitted. The following approvers must sign the actual Change Order for it to be a binding Contract amendment based on the delegation authority granted by the Commissioner of DCAMM:

The Director or Deputy Commissioner for Design and Construction approval shall be required whenever:

- a. the estimate for the work on the Form 5's (CORs) exceeds \$50,000 (absolute value); OR
- b. the cumulative cost of previously approved Form 5's (CORs) exceeds five percent of the original contract award price (or the amount of the GMP amendment in the case of a Chapter 149A project) and the amount of the Form 5 (COR) being approved is greater than \$2,000.00; OR
- c. The change order includes a time extension.

A Deputy Director of Design and Construction shall approve change orders for DCAMM when:

- a. The cumulative cost of previously approved Form 5's (CORs) is less than five percent of the original contract award price and the value of the Form 5 (COR) does not exceed \$50,000.00 (absolute value).

With the prior written approval of the Director or Deputy Commissioner for Design and Construction, the Project Manager shall approve change orders for DCAMM when:

- a. The cumulative cost of previously approved Form 5's (CORs) is less than five percent of the original contract award price and the value of the Form 5 does not exceed \$5,000.00 (absolute value); OR
- b. The estimate for the Form 5 is less than \$2,000.00 (absolute value).

BILLING FOR CHANGE ORDERS PRIOR TO RECEIVING THE CHANGE ORDER NUMBER FROM THE DCAMM PROJECT CONTROLS TEAM WILL RESULT IN THE PAYMENT APPLICATION BEING REJECTED.

SECTION 4. RESPONSIBILITY FOR PROCESSING AND APPROVING CHANGES

4.01 The Prime Contractor is responsible for verifying and validating all subcontractor, vendor and supplier costs and time extensions being requested as part of any change in the work. Refer to Contract General Conditions at Article VII.

4.02 The Prime Contractor, Architect/Designer, and DCAMM project team will review all PCO, COR, and Change Orders during the weekly Owner Meetings. There may be additional time needed to approve the changes and a timeframe for resolution are to be noted in the meeting minutes and on the PCO log.

PROJECT NAME

PROJECT NO.

P. C.

REQUEST FOR APPROVAL OF WAGES AND RATES FOR CHANGE ORDER PRICING

NAME OF SUBCONTRACTOR:

This form must be completed, submitted and approved prior to the submission of any change order price proposals. Complete the below for every Trade and Classification that is likely to work on the project. If any contractor seeks to utilize a total hourly wage rate (wages plus benefits) for change order pricing that is in excess of the applicable published prevailing wage rate, then this form must be completed, submitted (with backup documentation - i.e. union agreement) and approved prior to the submission of any change order price proposals. The information supplied below must be consistent with certified payroll submissions.

	Employee 1	Employee 2	Employee 3	Employee 4	Employee 5	Employee 6	Employee 7
1 Rate (Select type from drop down) ----->	Straight Time	Straight Time	Straight Time	2x Differential	1/2 Differential	Double Time	Time & Half
2 Trade Description (c.g., Carpenter, Pipefitter, Electrician, etc.)							
3 Classification (Foreman, Journeyman, Apprentice)	Journeyman	Foreman	Apprentice Step 1	Apprentice Step 3	Apprentice Step 5	Apprentice Step 7	Apprentice Step 9
4 Prevailing Wage Rate (Per Contract Specifications)							
Subcontractor Proposed Rates For Approval							
5 Requested Published Rate ² (must match certified payroll)				Premium	Premium	Premium	Premium
6 Enter Premium Portion of Base Rate (If Applicable)							
7 O&P, Insurance, and Taxes Base Prevailing Markups ^{1,4,4} (Multiply by Item 4 and Item 6 when applicable)	40.00%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
8 Workmen's Compensation Insurance Above 12.5% (applicable to straight time only, Multiply by Item 4)	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal All Inclusive Markups	40.00%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
9 Excess Wages/Fringes ³ (Item 5 minus Item 4)		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subcontractor Proposed Rate		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Loaded Rate		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Credit Change Order Value	85.00%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Effective Dates From To

The Above Total Loaded Rate is Being Requested For Approval For Use On Change Orders Expected to Be Performed Prior To The Noted Effective Date:

ENTER EFFECTIVE DATES ABOVE BEFORE SUBMITTING FOR APPROVAL

Sub-contractor Authorized Representative _____

Prime Contractor Authorized Representative _____

DCAMM Authorized Representative _____

NOTES:

- Contractor may utilize a rate of 40% for insurance/taxes without providing documentation. If a rate in excess of 40% is requested, documentation must be provided and is only applicable to Workmen's
- Attach all relevant supporting documentation such as union wage rate sheets and workers compensation rate tables.
- Excess wages/fringes are those fringes required to be paid which exceed the contract prevailing wage. DCAMM will reimburse these costs, once approved, as cost only (i.e., no markups allowed). Not all excess fringe benefits are reimbursable by DCAMM. Note that the following benefits are explicitly not allowed as part of the Published Rate: Union Dues, Vacation Funds, Uniforms, Earned Sick Leave, Etc.
- Time and a Half, Double Time, and Differential rates are calculated with 40% markup on the portion of wages above the straight time wage.

DIVISION OF CAPITAL ASSET MANAGEMENT & MAINTENANCE

c.30, c.149, c.149A ONLY

PROJECT NAME

PROJECT NO.

P. C. :

PCO NUMBER

PCO DESC.

PCO DATE

FORMAT FOR SUBMISSION OF CHANGE ORDER

WORK OF SUBCONTRACTOR AND/OR PRIME CONTRACTOR

NAME OF FIRM SUBMITTING CHANGE ORDER

1. DIRECT LABOR: "CONTRACTOR":

Use only DCAM-Approved Billing Rates

Applicable Billing Rate for each Trade and Classification **MUST** be completed!

Trade	Classification	Total Hrs. Worked	Fully Loaded Wage Rate (per Wage Rate Approval Form) THIS FIELD IS REQUIRED	Total Direct Labor Cost (Includes All Markups as Approved by DCAMM on the Wage Rate Approval Form)
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -

TOTAL BASE, EXCESS AND DIRECT LABOR COSTS

2. MATERIALS: "CONTRACTOR" :

(For extensive material lists, attach detailed backup and enter as a lump sum below)

Material Description	Qty	Unit	Cost Per Unit	Total
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -

TOTAL MATERIALS COST:

DIVISION OF CAPITAL ASSET MANAGEMENT & MAINTENANCE

c.30, c.149, c.149A ONLY

PROJECT NAME

PROJECT NO.

P. C. :

PCO NUMBER

PCO DESC.

PCO DATE

FORMAT FOR SUBMISSION OF CHANGE ORDER

WORK OF SUBCONTRACTOR AND/OR PRIME CONTRACTOR

NAME OF FIRM SUBMITTING CHANGE ORDER

3. EQUIPMENT: "CONTRACTOR" :

(For extensive equipment lists, attached detailed backup and enter as a lump sum below)

Equipment Description	Qty	Unit	Cost Per Unit	Total
			\$	-
			\$	-
			\$	-
			\$	-
			\$	-
			\$	-

TOTAL EQUIPMENT COST: \$

4. SUB TOTAL "CONTRACTOR" DIRECT COST FOR ITEMS 2 & 3:

SUB TOTAL: \$

5. MISC. LUMP SUM SERVICES (POLICE DETAIL, UTILITIES, ETC.) OR SUBCONTRACTED WORK PROVIDED TO "CONTRACTOR":

Description of Miscellaneous Lump Sum Service - attach backup	Total
	\$ -
	\$ -
	\$ -
	\$ -
	\$ -
	\$ -

TOTAL MISC. LUMP SUM SERVICES COST: \$

6. "CONTRACTOR" ALLOWED 5% O&P Mark Up - MISC. LUMP SUM SERVICES:

5.00% \$

7. SUB TOTAL "CONTRACTOR" LINE ITEMS 4., 5. & 6.:

SUB TOTAL: \$

DIVISION OF CAPITAL ASSET MANAGEMENT & MAINTENANCE

c.30, c.149, c.149A ONLY

PROJECT NAME	<input type="text" value="<project-name>"/>	PROJECT NO.	<input type="text" value="<project-number>"/>	P. C. :	<input type="text" value="<Prime Contractor>"/>
PCO NUMBER	<input type="text"/>	PCO DESC.	<input type="text"/>		
PCO DATE	<input type="text"/>				

FORMAT FOR SUBMISSION OF CHANGE ORDER

WORK OF SUBCONTRACTOR AND/OR PRIME CONTRACTOR

NAME OF FIRM SUBMITTING CHANGE ORDER

8. OVERHEAD AND PROFIT OF "CONTRACTOR":

The "Contractor" shall receive 15% of actual total cost of Item 4. For a net CREDIT change order amount, use 0%

Contractor 15.00% x ITEM 4: \$

9. TOTAL OF ITEMS 1., 7. and 8.

TOTAL COST OF WORK PERFORMED BY "CONTRACTOR": \$

9a. CONTRACTOR PREMIUM FOR BOND

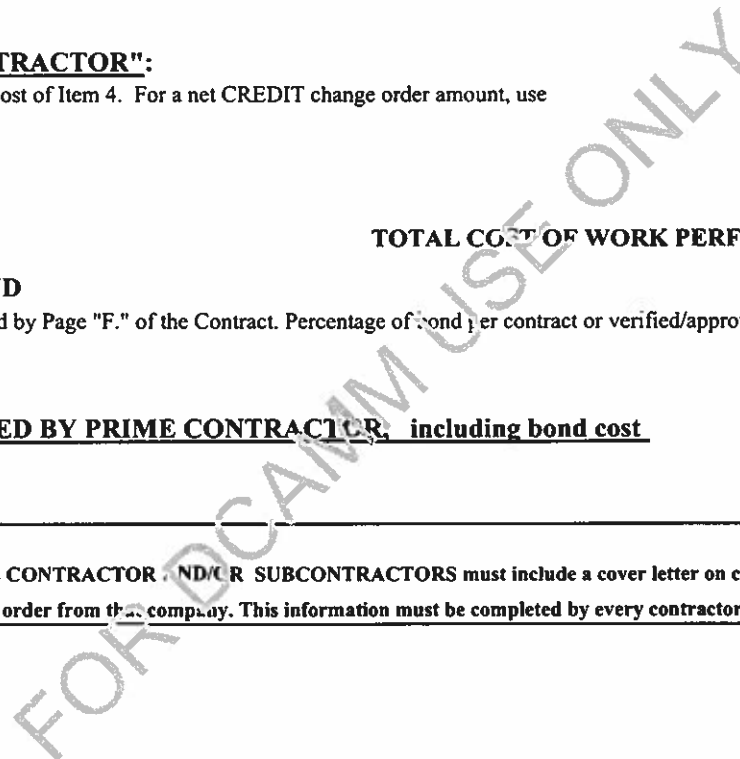
Only allowed for "Filed Sub Contractor" if required by Page "F." of the Contract. Percentage of bond per contract or verified/approved amount:

Percentage of approved bond x item 9. x ITEM 9: \$

10 TOTAL COST OF WORK PERFORMED BY PRIME CONTRACTOR, including bond cost

Enter the Value of Item 10 on the Summary Sheet

NOTE:
ALL change order proposals and invoices from the PRIME CONTRACTOR AND/OR SUBCONTRACTORS must include a cover letter on company letterhead identifying the PCO number, a description of the scope of work and the total cost of the proposed change order from the company. This information must be completed by every contractor doing work created by the change.



CHANGE ORDER LOG
 CONTRACT NO.: 2022-0XX
 CONTRACT TITLE: JOHN SMITH PROJECT

CHANGE ORDER TYPE		DATE SUBMITTED to PM	INCREASE TO CONTRACT			CHANGE ORDER TYPE				AMOUNT			DESCRIPTION OF CHANGE ORDER	REASON FOR INCREASE	DATE OF Approval
CO NO.	Rev. qty RQ#		Extra work EWO#	Alter- ation ALT#	Time ext. TM#	Rev. qty RQ#	Extra work EWO#	Alter- ation ALT#	Time ext. TM#	Financed from contract	Funding Item	ITEM NUMBER			
1	1														
2-1 2-2	2														
3-1 3-2 3-3 3-4 3-5 3-6	3														

DIVISION OF CAPITAL ASSET MANAGEMENT & MAINTENANCE

CONTRACTOR CHANGE REQUEST NO. _____ Rev. _____

Request and Agreement For Change in The Plans And/Or Specifications And/Or Contract

Project No. _____ Contract No. _____ Project Name _____
 Location _____

I. PROPOSED CHANGE

(a) Requested BY _____
 (b) Proposed Scope/Description: _____

II. CONTRACTOR PRICE PROPOSAL

For all costs involved in this change including extensions of time herein requested, the undersigned Contractor/CM proposes to perform the work described above in accordance with the provisions of Article VII of the General Conditions and certifies that: The Change Order Request is made in good faith; The validity of the Contractor/CM/Subcontractor/supplier change requests have been verified; the supporting data is accurate and complete to the best knowledge and belief of the Contractor/CM; and the Contractor/CM actually believes DCAMM is liable for the add amount, or entitled to the deduct amount of the Change Order Request, whichever is applicable. Any attempted amendment to this form shall be interpreted as superseded by the original printed language in the executed contract documents.

Request payment be made on the basis of:

- (a) _____ Predetermined lump sum total of \$ _____
- (b) _____ Lump sum not to exceed \$ _____
 (max price based on contract unit prices or negotiated agreed unit prices)
- (c) _____ Time and Materials Basis Not to Exceed \$ _____
 (computed in accordance with Article VII of the General Conditions)

Place X beside selected proposal method and identify (add) or (deduct) which ever applies. Attach detailed estimates and breakdown for above in accordance with change order instructions. If additional time is requested, furnish an explanation with the breakdown. A claim for work performed under protest shall be submitted per (c) above.

An extension of contract time of _____ Calendar days is requested.

Contractor _____ By _____ Date _____
 Firm Name Authorized Signature

III. DCAMM REVIEW *(This Section To Be Completed By DCAMM/EM Team)*

- (a) _____ Approved as Submitted
- (b) _____ Unilaterally Approved as Adjusted
 Revised Price *add / (deduct)* _____
 Revised Time Extension _____ Calendar Days
- (c) _____ Disapproved; Returned to Plans Contractor by _____
- (d) Operating Agency letter Attached _____
- (e) Resident Engineer letter Attached _____
- (f) Lead Design firm letter Attached _____

IV. CONTRACT MODIFICATION *(This section To Be Completed By Project Controls)*

- (a) The Original Contract Value \$ _____
- (b) Net Change by previously authorized Change Orders \$ _____
- (c) The Contract Value prior to this Change Order was \$ _____
- (d) The Contract Value will be *add / (deduct)* By this Change Order
 in the Amount of \$ _____
- (e) *The new Contract Value including this Change Order will be* \$ _____
- (f) The Contract Time will be *add / (deduct)* by _____ Calendar Days
- (g) The New contract Completion date is therefore revised from _____ To _____

Approval Recommended By (initial/Date If Applicable): Deputy Director _____ Project Manager _____ Project Engineer _____

This change is in the best interest of the Commonwealth and constitutes an equitable adjustment of the Contract in compliance with Art. VII

DCAMM Authorized Signature _____ Date _____
 Project Manager Deputy Director Director Deputy Commissioner

DCAMM Change Order Number _____

WEEKLY PAYROLL REPORT FORM
 THE COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF MENTAL HEALTH

DMH Project No. _____ Project Name _____
 Project Location _____
 Name of General Contractor _____
 Name of Contractor Filing Report _____
 Address _____
 Week Ending _____ Date Work Began _____ Date work completed _____
 Report No. _____ Check here if this is a final report

Employee Name & Address	Work Classification	Hours Worked							(A) Total Hours	(B) Hourly Base Wage	Employer Contributions			(F) [B+C+D+E] Hourly Total Wage (prev.)	(G) [A*F] Weekly Total Amount
		S	M	T	W	T	F	S			(C) Health & Welfare	(D) Pension	(E) Supp. Unemp.		

NOTE: Every contractor and subcontractor is required to submit a copy of their weekly payroll records to DCR. The undersigned states under the pains & penalties of perjury that the above provided and attached information is a true and accurate record of each person employed on the project and the hours worked and wages paid to each such employee, including payments to the referenced benefits. M.G.L. c. 149 §27B.

Authorized signature _____ Print Name _____
 Print Title _____

Mail to: Department of Mental Health
 Mariana G. O'Brien
 167 Lyman Street
 Westborough, MA 01581

WEEKLY PAYROLL RECORDS REPORT & STATEMENT OF COMPLIANCE

In accordance with Massachusetts General Law c. 149, §27B, a true and accurate record must be kept of all persons employed on the public works construction project for which the enclosed rates have been provided. The *Weekly Payroll Report Form* includes all the information required to be kept by law. Every contractor or subcontractor is required to keep these records and preserve them for a period of three years from the date of completion of the project.

In addition, every contractor and subcontractor is required to submit a copy of their weekly payroll records to the awarding authority. This is required to be done on a weekly basis. Once collected, the awarding authority is also required to preserve those records for three years.

In addition, each such contractor, subcontractor, or public body shall furnish to the **Executive Office of Labor**, within fifteen days after completion of its portion of the work, a statement, executed by the contractor, subcontractor or public body who supervises the payment of wages, in the following form:

STATEMENT OF COMPLIANCE

Date: _____ / _____, 200_____

I, _____, _____
(Name of signatory party) (Title)

do hereby state:

That I pay or supervise the payment of the persons employed by

_____ on the _____
(Contractor, subcontractor or public body) (Building or project)

and that all mechanics and apprentices, teamsters, chauffeurs and laborers employed on said project have been paid in accordance with wages determined under the provisions of sections twenty-six and twenty-seven of chapter one hundred and forty nine of the General Laws.

Signature _____

Title _____

PAYROLL & WORKFORCE REPORT CONTRACT NO.: 2022-0XX CONTRACT: JOHN SMITH PROJECT	Legend: ps Professional services claiming exemption io Independent oper. Claiming exemption rec DCR received dpr disputing payroll require. diss received letter of dissolution
---	--

Week ending	General Contractor	Sub-bidder #01	Sub-bidder #02	Sub-bidder #03	Sub-bidder #04	Sub-bidder #05	Sub-contractor non-filed #1	Sub-contractor non-filed #2	Sub-contractor non-filed #3	Sub-contractor non-filed #4			
	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF
9/13/2014													
9/20/2014													
9/27/2014													
10/4/2014													
10/11/2014													
10/18/2014													
10/25/2014													
11/1/2014													
11/8/2014													
11/15/2014													
11/22/2014													
11/29/2014													
12/6/2014													
12/13/2014													
12/20/2014													
12/27/2014													
1/3/2015													
1/10/2015													
1/17/2015													
1/24/2015													

PAYROLL & WORKFORCE REPORT CONTRACT NO.: 2022-0XX CONTRACT: JOHN SMITH PROJECT	Legend: ps Professional services claiming exemption io Independent oper. Claiming exemption rec DCR received dpr disputing payroll require. diss received letter of dissolution
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Week ending	General Contractor	Sub-bidder #01	Sub-bidder #02	Sub-bidder #03	Sub-bidder #04	Sub-bidder #05	Sub-contractor non-filed #1	Sub-contractor non-filed #2	Sub-contractor non-filed #3	Sub-contractor non-filed #4			
	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF	PR WF
1/31/2015													
2/7/2015													
2/14/2015													
2/21/2015													
2/28/2015													
3/7/2015													
3/14/2015													
3/21/2015													
3/28/2015													
4/4/2015													
4/11/2015													
4/18/2015													
4/25/2015													

ESTIMATE NUMBER: XX Partial

ESTIMATE DATE: 1/1/2021

PERIOD: From: 1/1/2021 to 2/1/2021

PROJECT NAME: 2022-0XX CONTRACT FULL NAME
LOCATION OF WORK: SOMEPLACE MENTAL HEALTH FACILITY
ADDRESS: STREET NAME, TOWN, STATE, ZIPCODE

CONTRACTOR: JOHN SMITH CONSTRUCTION, INC
ADDRESS: STREET NAME, TOWN, STATE, ZIPCODE

VENDOR CODE: VC xxxxxxx

MMARS FUNDING CODES (as required)

PAYMENT NO. CODE UTILIZED -5%

Basis of Award: \$ 100,000.00 Contract Start Date: 1/1/2021

Award + Extras: \$ 100,000.00 Original Completion Date: 2/1/2021

Revised Completion Date: 2/1/2021

Utilization To-Date: \$ - 0.00% by Value 100.00% by Time

Retainage Held To-Date: \$ - #DIV/0!

CONTRACT SUMMARY

Table with columns: Previous Periods, Current Period, Total To-Date. Rows include UTILIZATION, UTILIZATION NO RETAINAGE, ACTUAL UTILIZATION, RETAINAGE, RETAINAGE RELEASED, PAID.

I HEREBY CERTIFY, UNDER THE PAINS AND PENALTIES OF PERJURY THAT ALL CONTRACT ITEMS FOR WHICH PAYMENT IS HEREBY REQUESTED HEREIN HAVE BEEN DELIVERED TO THE DCR AND ALL WORK FOR WHICH PAYMENT IS HEREBY REQUESTED HEREIN HAS BEEN PERFORMED ON THE BEHALF OF THE DCR.

Contractor signature here or AIA letter signature

CONTRACTOR/CONSULTANT AUTHORIZED SIGNATURE

DATE

PROJECT ENGINEER SIGNATURE

DATE

DIRECTOR, OEFM SIGNATURE (FOR FINAL PAYMENT ONLY)

DATE

Large empty table grid for payment tracking with columns for Payment No., Code, Utilized, and -5%.

TOTALS: \$ - \$ -

DMH CONTRACT PAYMENT REVIEW AND TRACKING FORM

Vs. 8/20/2021

PROJECT NAME: 2022-OXX CONTRACT FULL NAME
 LOCATION OF WORK: SOMEPLACE MENTAL HEALTH FACILITY
 PROJECT NUMBER: STREET NAME, TOWN, STATE, ZIPCODE
 CONTRACTOR: JOHN SMITH CONSTRUCTION, INC

Original Contract Value: \$100,000.00
 Current Contract Value: \$100,000.00

Notice To Proceed Date: 1/1/2021
 Original Contract Completion Date: 2/1/2021
 Current Completion Date: 2/1/2021 Duration: -31 Days
 Current Percent Expired: 100.00%

Invoicing Details

Current Invoice No: XX Partial

	THROUGH DATE	PAID AMOUNT	RETAINAGE	UTILIZATION	%
Current Invoice	2/1/2021	\$ -	\$ -	\$ -	0.00%
Total Prior Invoices		\$ -	\$ -	\$ -	0.00%
Total to date	2/1/2021	\$ -	\$ -	\$ -	0.00%

Description of work since last review

DESCRIPTION OF WORK	\$0.00
---------------------	--------

Contract changes and status

Amendment Description (Time, Value, etc.)	Change No.	Change in Value	% of Change	Current End Date	New Total Value	Approval Date
AWARD CONTRACT				2/1/2021	\$100,000.00	1/1/2021
CO#01	1		0.0%	2/22/2021	\$100,000.00	1/1/2021

Submitted by: FIRSTNAME LASTNAME, DMH PROJECT ENGINEER

Date: 1/1/2021

PAYMENT SUMMARY

PROJECT NAME: 2022-0XX CONTRACT FULL NAME
LOCATION OF WORK: SOMEPLACE MENTAL HEALTH FACILITY
ADDRESS: STREET NAME, TOWN, STATE, ZIPCODE
CONTRACTOR: JOHN SMITH CONSTRUCTION, INC

start date	end date	Payment	Utilization current period	Utilization previous period	Utilization to date	5% retainage current period	retainage previous periods	retainage paid current period	retainage paid to date	retainage held to date	Paid Current Period	Previous payment Paid	Total Paid to date
1/1/2021	2/1/2021	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
		2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
		3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
		4											
		5											
		6											
		7											
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		16											
		17											
		18											
		19											
		20											
		21											
		22											
		23											
		24											
			Award + Extras: \$ 100,000.00										
			Utilization remaining: \$ 100,000.00										

SUBMITTAL LOG - SHOP DRAWINGS AND SAMPLES												
CONTRACT NO.: 2022-0XX												
CONTRACT TITLE: JOHN SMITH PROJECT												
Submittal NO.	DATE OF SUBMITTAL	DATE Received by PM	DATE Received by Consult.	DATE Returned by Consult.	DATE Returned by PM	Turn-around (days)	SPEC. ITEM NUMBER	DESCRIPTION OF SHOP DRAWING, SAMPLE, OR PROCEDURE WITH NAME OF VENDOR	No of pages including covers	DATE NO EXCEPTION TAKEN	DATE MAKE CORRECTIONS AS NOTED	DATE REVISE AND RESUBMIT
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
11A												

CONTRACT NO.: 2022-0XX

PROJECT NAME: John Smith Project

AGENCY: Massachusetts Department of Mental Health

REQUEST FOR INFORMATION

DATE: 00/00/2021

TO: DMH Project Engineer, first name last name

FROM: General Contractor name

RFI No.: #0xx Item or Section No - Title

REQUESTED INFORMATION:

RESPONSE:

Response prepared by (Name): _____

Signed: _____ Date: _____

RFI#0XX RFI Title

REQUEST FOR INFORMATION LOG
CONTRACT NO.: 2022-0XX
CONTRACT TITLE: JOHN SMITH PROJECT

RFI NO.	DATE OF RFI	PREPARED BY	DATE SUBMITTED by RE or update info	SPEC. ITEM NUMBER	DESCRIPTION OF REQUEST FOR INFORMATION	DATE OF RESPONSE	DESCRIPTION OF RESPONSE	Change Order No. required

**COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ADMINISTRATION AND FINANCE
DIVISION OF CAPITAL ASSET MANAGEMENT AND MAINTENANCE
ONE ASHBURTON PLACE, BOSTON, MA 02108**

E-1 CERTIFICATE OF SUBSTANTIAL COMPLETION (M.G.L. C.30, Section 39K)

FROM AWARDING AUTHORITY: Commonwealth of Massachusetts, Division of Capital Asset Management and Maintenance

TO: General Contractor: {Company.Name}

RE: Mass. State Project No.: {Projects.Sequence} {Projects.SuffixID}
Title: {Projects.Name}
Location: {Projects.Territory}, MA

AUTHORITY: 1) ARTICLE VI of Standard Construction Contract
2) M.G.L. Chapter 30, Section 39K

Pursuant to the authority noted above you are notified that the Commonwealth of Massachusetts, through its Division of Capital Asset Management and Maintenance, is satisfied that the portion of the above noted project, as hereinafter enumerated, is substantially complete. [IDENTIFY PORTIONS TO BE USED AND/OR OCCUPIED – IF APPLICABLE]

The Commonwealth of Massachusetts, through its undersigned representatives, hereby accepts from the Contractor, subject to contract stipulation, said portion of the project effective as of Midnight, the [INSERT DAY] day of [INSERT MONTH], 20[INSERT YEAR]. The Contractor is relieved of responsibility for performing further work or supplying further materials, equipment or items, with the exception of the attached. (Append a complete list of all incomplete or unsatisfactory items of contract work which in the opinion of the Commonwealth are attributable to the fault, negligence or oversight of the Contractor, his sub-contractor, material suppliers, agents, servants or employees.)

The use of any portion of the project or the occupancy of any building or portion thereof by the Commonwealth shall not constitute a final acceptance of any work not performed in accordance with the Contract, nor relieve the Contractor of liability to perform any work required by the Contract or of liabilities with respect to any warranties or guarantees required by the Contract.

The undersigned recommend the issuance of this Certificate of Substantial Completion.

	Signature	Date
Designer: {LegalDocInfo.ArchName}	by: _____	
Operating Agency: {LegalDocInfo.owner}	by: _____	
DCAMM Resident Engineer: {Projects.ProjectExecutive}	by: _____	
DCAMM Project Engr.: {Projects.ProjectExecutive}	by: _____	
DCAMM Project Mgr.: {Projects.ProjectManager}	by: _____	

APPROVED

Jay Mitchell, Deputy Commissioner, Design and Construction Date

<p>original: Operating Agency Project Manager Contracts Manager Contractor (include original E1 cover letter)</p>	<p>ecc: Deputy Director Project Engineer Designer Resident Engineer Economist, OFA Director of Finance, OFA Bid Room Manager, OFA Deputy Director, Certification</p>
---	--

**E-2 Final Acceptance
Certificate of Final Inspection, Release and Acceptance**

Title: _____

Location: _____

Contractor: _____

This is to certify that a complete inspection of the above-referenced project was made on _____ by the undersigned, and that the entire work was completed in accordance with the plans and specifications. The undersigned recommends acceptance of the project.

_____	by: _____	Title: _____	Date: _____
Signature	Designer		Authorized

_____	Date	_____	Date
Resident Engineer		Project Manager	
_____	Date		
Project Engineer			

CERTIFICATE OF RELEASE

1.) The undersigned hereby certifies that all work has been completed in accordance with the plans, specifications and contract documents and that all change orders have been supported pursuant to Article VII of the General Conditions of the Contract.

2.) Contract Award Price: \$	Adjusted Contract Price: \$
Authorized Additions: \$	Paid to Date: \$
Authorized Deductions: \$	Balance Due: \$

3.) The undersigned further certifies that in addition to the amount set forth above, there are outstanding and unsettled the following change orders as submitted to the DCR.

Request No.	Date:	Amount:
Request No.	Date:	Amount:
Request No.	Date:	Amount:

Subject to satisfactory disposition of change orders listed in Item 3 above, the undersigned releases the Commonwealth of Massachusetts from all further claims for wages or payments to subcontractors or suppliers except: (list on attached sheet).

_____ by: _____
Contractor Authorized Signature

The above-referenced project is accepted as of _____
Date

Deputy Commissioner, Engineering
Deputy Director
Project Manager
Resident Engineer
Office of Contract Administration
Contractor

CERTIFICATE OF PAYMENT

BY CONTRACTOR/DESIGNER TO MINORITY, WOMEN BUSINESS
& VETERAN OWNED BUSINESS ENTERPRISES

TO: Supplier Diversity Reports
 Department of Mental Health
 Office of Engineering and Facilities Management
 167 Lyman Street
 Westborough, MA 01581

Reporting Period: Fiscal Year 20__

RE: Project:
 Project Number:

Contract Start Date:

The undersigned hereby certifies under the pains and penalties of perjury that the vendor named below has made the following payments to the named Minority, Women Business and Veteran Owned Enterprises for work performed on the above project:

Firm Name of General Contractor:

Authorized Signature

Date

Print Name

Print Title

Phone Number

Email address

Work performed/payments made (use additional pages if needed):

	Firm Name	Work Performed	Subcontract Amount	Payments This Quarter	FY Payments to date (this fiscal year 7/1/2018 - 6/30/2019)	Cumulative Payments (total payments over the life of the contract)
MBE WBE VOBE			\$	\$	\$	\$
MBE WBE VOBE			\$	\$	\$	\$
MBE WBE VOBE			\$	\$	\$	\$
MBE WBE VOBE			\$	\$	\$	\$
MBE WBE VOBE			\$	\$	\$	\$
MBE WBE VOBE			\$	\$	\$	\$
MBE WBE VOBE			\$	\$	\$	\$

* MBE, WBE and VOBE payment reports are required for each quarter of the fiscal year for each of your DMH projects. Reports are to cover the following three month periods: 1st quarter, July 1st – September 30th; 2nd quarter, October 1st – December 31st; 3rd quarter, January 1st – March 31st; 4th quarter, April 1st – June 30th. Reports must be submitted within 10 business days of your receipt of this form.

NOTICE: *Intentionally submitting false information in this document may subject the contractor/ designer to criminal prosecution and/ or debarment from public contracting.*

INSTRUCTIONS FOR COMPLETING CERTIFICATE OF PAYMENT

As part of its effort to ensure reliable, up-to-date information concerning the actual payments made to certified MBE, WBE and VOB subcontractors on all DMH projects, we have prepared these instructions to assist you in completing the enclosed form. **PLEASE READ THESE INSTRUCTIONS CAREFULLY. DMH WILL RETURN ANY CERTIFICATION OF PAYMENT THAT IS INCOMPLETE OR INACCURATE.**

PLEASE NOTE: IF THIS PROJECT IS COMPLETE, ON HOLD, OR YOUR FIRM PREVIOUSLY SUBMITTED A **FINAL** CERTIFICATION OF M/WBE/VOBE PAYMENT FOR THIS PROJECT, PLEASE SO INDICATE ON THE FORM AND RETURN IT TO: SUPPLIER DIVERSITY REPORTS, DEPARTMENT OF MENTAL HEALTH, OFFICE OF ENGINEERING AND FACILITIES MANAGEMENT, 167 LYMAN STREET WESTBOROUGH, MA 01581

PLEASE INCLUDE THE FOLLOWING INFORMATION IN THE DESIGNATED SECTIONS OF THE FORM:

FIRM NAME: Include the M/WBE/VOBEs listed on the project's approved Schedule For Participation and any additional M/WBE/VOBEs that worked on the project. Be sure to check M/WBE/VOBE category for which they are certified. Note that any change in M/WBE/VOBEs participation used to meet the project goals must be pre-approved by the Project Manager or Engineer responsible for this project and a revised M/WBE/VOBE Schedule of Participation will be required. Contact the DMH Supplier Diversity coordinator immediately if you anticipate or have any changes in M/WBE/VOBE participation on this project.

WORK PERFORMED: Include a brief description of the work performed by each subcontractor listed. The description should match the M/WBE/VOBE Letter of Intent and approved Schedule of Participation. M/WBE/VOBEs must be certified in the category of work performed on this project for firms used to meet the project M/WBE/VOBE goals.

SUBCONTRACT AMOUNT: Include the contract or subcontract amounts listed on the M/WBE/VOBE Letters of Intent and approved Schedule of Participation. If the value of a MBE/WBE/VOBE contract or subcontract has decreased or increased for any reason, you must contact the Project Manager or Engineer responsible for this project immediately. If additional M/WBE/VOBE firms not listed on the Schedule for Participation worked on this project list the amount of their subcontracts.

PAYMENTS THIS QUARTER: Include the amount you paid the M/WBE/VOBE subcontractor, either directly or indirectly, for work performed on this project during the three month period covered by this Certification of Payment. If the amount paid was zero, please indicate that. Do not include payments from previous periods or estimated future payments in this column. Please note that you may be required to submit copies of cancelled checks to verify the amounts reported for firms used to meet the project's M/WBE/VOBE goals.

FY PAYMENTS TO DATE: Include the total amount you paid the M/WBE/VOBE subcontractor, either directly or indirectly, for work performed on this project for all quarters in **this fiscal year.** To ensure accurate reporting, please review the prior Certifications of Payments previously submitted for this project. Where necessary, correct any earlier mathematical or reporting errors and submit revised Certifications of Payment.

CUMULATIVE PAYMENTS: Include the total amount you paid the M/WBE/VOBE subcontractor, either directly or indirectly, for work performed over the entire life of this project (all quarters).

IF YOU HAVE ANY QUESTIONS CONTACT DMH Supplier Diversity coordinator.

INSTRUCTIONS FOR COMPLETING CERTIFICATE OF PAYMENT

As part of its effort to ensure reliable, up-to-date information concerning the actual payments made to certified Sub-bidder (SB), Non Sub-bidder (NSB) and Supplier (S) subcontractors on all DMH projects, we have prepared these instructions to assist you in completing the enclosed form. PLEASE READ THESE INSTRUCTIONS CAREFULLY. DMH WILL RETURN ANY CERTIFICATION OF PAYMENT THAT IS INCOMPLETE OR INACCURATE.

PLEASE NOTE: IF THIS PROJECT IS COMPLETE, ON HOLD, OR YOUR FIRM PREVIOUSLY SUBMITTED A **FINAL** CERTIFICATION OF SB/NSB/S PAYMENT FOR THIS PROJECT, PLEASE SO INDICATE ON THE FORM AND RETURN IT TO: DEPARTMENT OF MENTAL HEALTH, OFFICE OF ENGINEERING AND FACILITIES MANAGEMENT, 167 LYMAN STREET WESTBOROUGH, MA 01581.

PLEASE INCLUDE THE FOLLOWING INFORMATION IN THE DESIGNATED SECTIONS OF THE FORM:

FIRM NAME: Include the SB/NSB/S listed on the project's approved Schedule For Participation and any additional SB/NSB/Ss that worked on the project.

WORK PERFORMED: Include a brief description of the work performed listed.

SUBCONTRACT AMOUNT: Include the contract or subcontract amounts listed.

PAYMENTS THIS QUARTER: If applicable, include the amount, either directly or indirectly, for work performed on this project during the three month period covered by this Certification of Payment. If the amount paid was zero, please indicate that. Do not include payments from previous periods or estimated future payments in this column.

FY PAYMENTS TO DATE: Include the total amount you paid, either directly or indirectly, for work performed on this project for all quarters in **this fiscal year**. To ensure accurate reporting, please review the prior Certifications of Payments previously submitted for this project. Where necessary, correct any earlier mathematical or reporting errors and submit revised Certifications of Payment.

CUMULATIVE PAYMENTS: Include the total amount you paid, either directly or indirectly, for work performed over the entire life of this project (all quarters).

IF YOU HAVE ANY QUESTIONS, CONTACT DMH OFFICE OF ENGINEERING AND FACILITIES MANAGEMENT.

CERTIFICATE OF PAYMENT

BY CONTRACTOR/DESIGNER

to Sub-Bidder(s), Non-Sub-bidder(s), and Supplier(s)

TO: Department of Mental Health
Office of Engineering and Facilities Management
167 Lyman Street
Westborough, MA 01581

Reporting Period: Fiscal Year 20__

RE: Project:
Project Number:

Contract Start Date:

The undersigned hereby certifies under the pains and penalties of perjury that the vendor named below has made the following payments to the named SB, NSB, AND S companies for work performed on the above project:

Firm Name of General Contractor:

Authorized Signature

Date

Print Name

Print Title

Phone Number

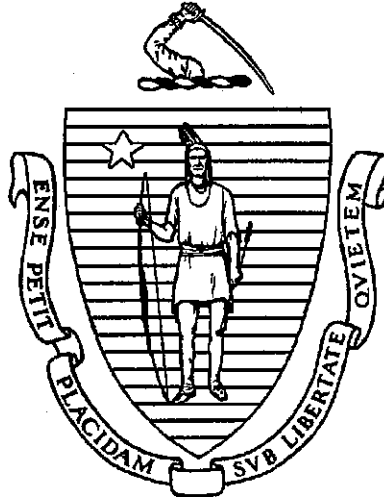
Email address

Work performed/payments made (use additional pages if needed):

	Firm Name	Work Performed	Subcontract Amount	Payments This Quarter	FY Payments to date (this fiscal year 7/1/2018 - 6/30/2019)	Cumulative Payments (total payments over the life of the contract)
SB NSB S			\$	\$	\$	\$
SB NSB S			\$	\$	\$	\$
SB NSB S			\$	\$	\$	\$
SB NSB S			\$	\$	\$	\$
SB NSB S			\$	\$	\$	\$
SB NSB S			\$	\$	\$	\$
SB NSB S			\$	\$	\$	\$

* Sub Bidder (SB), Non Sub-Bidder (NSB), and Supplier (S) payment reports are required for each quarter of the fiscal year for each of your DMH projects. Reports are to cover the following three month periods: 1st quarter, July 1st – September 30th; 2nd quarter, October 1st – December 31st; 3rd quarter, January 1st – March 31st; 4th quarter, April 1st – June 30th. Reports must be submitted within 10 business days of your receipt of this form.

NOTICE: *Intentionally submitting false information in this document may subject the contractor/ designer to criminal prosecution and/ or debarment from public contracting.*



BID PACKAGE

PART IV

PROJECT SPECIFICATIONS

**DMH PROJECT #2023-072
RENOVATION TO THE OFFICE OF ENGINEERING AND
FACILITIES MANAGEMENT (OEFM)
HADLEY BUILDING
167 LYMAN STREET
WESTBOROUGH, MA 01581**

**THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF HUMAN SERVICES
DEPARTMENT OF MENTAL HEALTH**

S P E C I F I C A T I O N S

FOR

RENOVATION TO OEFM OFFICE

AT

**167 LYMAN STREET
WESTBOROUGH, MASSACHUSETTS 01581**

.....
PROJECT NO. 2023-072
.....

**DEPARTMENT OF MENTAL HEALTH
OFFICE OF FACILITIES MANAGEMENT
HADLEY BUILDING - 167 LYMAN STREET
WESTBOROUGH, MA 01581**

**PREPARED BY: The Vertex Companies
Shahnaz Karim**

**REVIEWED BY: Mariana O'Brien, Ph.D.
DATE: DECEMBER 2022**

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HADLEY BUILDING OFFICE OF FACILITIES MANAGEMENT RENOVATION - 167 LYMAN STREET WESTBOROUGH, MA

**SECTION 011000
SUMMARY OF THE WORK**

PART 1 – GENERAL

1-01 CONTRACT REFERENCES

- A. Attention is directed to the CONTRACT and GENERAL CONDITIONS and all Sections within Division 1 – GENERAL REQUIREMENTS that are hereby made a part of this Section of the Specifications.
- B. Equality of material, article, assembly or system other than those named or described in this Section shall be determined in accordance with the provisions of the CONTRACT and GENERAL CONDITIONS.
- C. Due to the nature of the facility’s operations and security concerns for the users, the following project intentions should be noted:
 - 1. All facility construction, materials delivery and storage, tool use, site security and finished construction product should acknowledge these concerns.
 - 2. This document entails the renovation of the office of engineering and facilities management (OEFM) office space at the Hadley Building. The work shall be executed to meet all requirements of the Massachusetts State Building Code, 9th (or current) edition, in addition to all other applicable codes and regulations.
 - 3. Contractor shall complete work by the end of the day, assuring safety and security of users by the end of the day.
 - 4. The new Work shall include all preparatory, installation and application operations necessary to procure, provide, deliver, and install the described materials, systems, and components, to facilitate a fully installed and operable condition including obtaining all necessary licenses, sureties, permits, certificates, and warranties.

1-02 WORK UNDER THIS CONTRACT

- A. The work described under this Contract is to provide all labor, material, tools, equipment, and supervision necessary to subdivide one office into two, and install ductless multizone systems as indicated on the bid drawings. The facility is the Hadley Building located on the Westborough State Hospital property at 167 Lyman Street Westborough, Massachusetts 01581.
- B. The work includes, but is not limited to:

1. Application of, paying for, and securing any and all permits required from local, state and federal agencies, and other authorities having jurisdiction over construction on the Site, including submitting, revising, and resubmitting all required plans, permits, and notifications.
 2. Preparation and submission of project work plan and schedules. The Plan shall include all requirements necessary to keep all facilities open at all times for safe public access and use.
 3. Mobilization to the Site including but not limited to establishment of the Contractor's space within the building.
 4. Establish work area perimeter and dust control measures.
 5. Selective Demolition, as noted in drawings.
 6. Provide labor and material to complete the work described in both drawings and specifications.
 7. Perform required selective demolition, including but not limited to, removal of the existing and surrounding areas as designed and illustrated on the plans, i.e., partition walls, existing mechanical, lighting, etc.
 8. Miscellaneous patching and repair of ceilings, flooring, cove, and walls.
 9. Request all required inspections and address any deficiencies identified by the inspectors such that a certification for occupancy is provided.
- C. Contractor shall submit a list of preliminary Contract deliverables:
1. Schedule of Values, Construction Schedule, Permits, etc., as well as product submittals for items with long lead times, for Designer's approval.
 2. Upon mobilization, establish site access and secure Area of Project work.
 3. Make safe all building systems in anticipation of demolition, removal, disposal, etc., of existing systems, materials, and finishes.
 4. Procure new materials upon approval of layout and submittals.

1-03 PROJECT/SITE CONDITIONS

- A. Coordinate with the facilities management for access and coordination of all work.
- B. The existing building is occupied and will continue to be so during construction. The work shall be done to not disrupt existing operation of Owner or clients.

- C. Any shutdowns of electricity or water supply shall be coordinated with the Owner's representatives at least 48 hours in advance. Minor disruptions not affecting the operation may be allowed during normal working hours. Other disruptions will only be allowed on off hours, shall be properly scheduled in advance, and shall not be greater than a 4-hour continuous duration.
- D. No existing system shall be left inoperable at any time, except for short periods during normal working hours.
- E. The Contractor shall be completely responsible for protection and guarding of the job site to not create a hazard.
- F. Comply with the Owner's requirements concerning work rules in existing buildings, especially with respect to noise, drilling and cutting, etc.
- G. On-Site Work Hours: Work shall be generally performed during the working hours of 8:00 a.m. to 4:00 p.m., Monday through Friday.
 - 1. Notify and obtain approval from Owner's Project Engineer not less than two days in advance of proposed changes in the working hours.
- H. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Personnel is required to use identification tags at all times.
- I. Visitor Identification: Provide identification tags for visitors on Project site, including Owner's Project Manager, Architect, Consultants, and Hadley building's personnel. Visitors shall use identification tags at all times.
- J. Smoking and Controlled Substance Restrictions: Use of tobacco products, alcoholic beverages, and other controlled substances on Project site is not permitted.
- K. Employee Screening: Comply with Owner's requirements for background screening of Contractor personnel working on Project site.
 - 1. All Contractor and Filed Subcontractor personnel on site will be subject to Criminal Offender Record Information (CORI) Regulations.
 - a. Contractor shall request a criminal record check be performed for all personnel on site.
 - b. Contractor shall maintain list of approved screened personnel with Owner's Project Engineer.

1-04 PROJECT MEETINGS

- A. Project meetings shall be held on a bi-weekly basis subject to the discretion of the Project Engineer.
- B. As a prerequisite for monthly payments, weekly payroll reports shall be submitted by the General Contractor.
- C. To expedite construction progress on this project, the general contractor shall order all materials immediately after the approval of submittals and shop drawings and shall obtain a fixed date of delivery to the project site for all materials ordered which shall not impede or otherwise interfere with construction progress.
- D. Scheduling shall be discussed with all concerned parties, and methods shall be presented by the General Contractor, which shall reflect construction completion not being deferred, at no additional expense to the Commonwealth.
- E. Bi-weekly project meetings shall be chaired by the Project Engineer.

1-05 PERMITS, INSPECTION AND TESTING REQUIRED BY GOVERNING AUTHORITIES

- A. If the contract documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction required any portion of the work to be inspected, tested or approved, the General Contractor shall give the Project Engineer notice of its readiness so the Project Engineer may observe such inspection and testing.
- B. Prior to the start of construction, the General Contractor shall complete application to the applicable Building Code enforcement authority for a Building Permit. Such Permit shall be displayed in a conspicuous location at the project site. The General Contractor shall pay all costs associated with the Building Permit.

1-06 TIME OF COMPLETION

- A. The Work shall start as stated in the Notice to Proceed and shall be completed within **60** consecutive calendar days.

1-07 THE CONTRACT DOCUMENTS

- A. 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.
- B. The required materials for the construction will be of non-proprietary design and shall meet all the specific guidelines as described within the supplied specifications and drawings. The scope of work as described within the bid documents shall be considered as an integral part of the construction of the project and changes in the design will be considered unacceptable unless a written submittal has been approved before the actual changes are made to the design. It also must be noted that no substitutions will be allowed where the suggested product is of less quality than what has been specified within the bid documents, only products meeting the base standard as noted will be considered.
- C. In case of disagreement between the Drawings and Specifications, or within either document itself, the Designer shall interpret the Documents to require the better quality or greater quantity of work for the Owner that can reasonably be construed therefrom. Any work performed by the Contractor without consulting the Designer, when the same requires a decision, shall be performed at the Contractor's risk.

1-08 EXISTING CONDITIONS

- A. The Hadley building built in 1950, originally hosted the Westborough State Hospital. Currently, the use group of this facility is Business (B). The building has brick exterior and tar gravel roof cover with no sprinkler system.

1-09 EXAMINATION OF SITE AND DOCUMENTS

- A. A mandatory pre-bid conference will be held at the job site on the date and at the time indicated in the Invitation to Bid.
- B. The bidders are expected to examine and to be thoroughly familiar with all contract documents and with the conditions under which the work is to be carried out. The Commonwealth will not be responsible for errors, omissions, and/or charges for extra work arising from the Contractors or Subcontractors failure to familiarize themselves with the contract documents, that he is familiar with the conditions and requirements of

both where they require, in any part of the work a given result to be produced, that the contract documents are adequate and he will produce the required results.

1-10 EXAMINATION OF SITE AND DOCUMENTS

- A. Contractor must be certified in both DCAMM categories of General Building Construction, and all areas of work described on the drawings.
- B. The Contractor shall submit the name and resume of the proposed superintendent to DMH Project Manager for approval.
- C. The Contractor's Updated Statement is not a public record as defined in M.G.L., Chapter 4, Section 7, and will not be open to public inspection.

1-11 CONTRACT METHOD

- A. Work under this Contract shall be lump sum price, for the scope of work included within the base bid and as described in these Specifications.
- B. Should additional work be required, the procedures specified in the Contract shall apply.
- C. The Massachusetts Standard Labor Wage rates, as included in the Contract exhibits, will be used for base contract work, as well as any change order work.

1-12 SUPERVISION OF THE WORK

- A. The Contractor shall be held directly responsible for the correct installation of all work performed under this Contract. The Contractor must make good repair, without expense to the Commonwealth, of any part of the new work, or existing work to remain, which may become inoperative on account of leaving the work unprotected or unsupervised during construction of the system or which may break or give out in any manner by reason of poor workmanship, defective materials or any lack of space to allow for expansion and contraction of the work during the Contractor's warranty period, from the date of final acceptance of the work by DMH.
- B. The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with his direct work.

1-13 CONTRACTOR'S USE OF THE PREMISES

- A. The Contractor can gain access to the premises during the hours specified below. In addition, the Contractor and company personnel will limit themselves to only within the working premises during working hours. If work needs to be scheduled during times other than those listed below, Contractor shall inform the DMH Project Engineer one week prior to work.
 - 1. Deliveries: 7:00 am to 8:30 am and after 1:00 pm.
 - 2. General Access: 8:00 am to 4:00 pm.

- B. Confine operations at the site to areas permitted by:
 - 1. Laws
 - 2. Ordinances
 - 3. Permits
 - 4. Contract Documents
 - 5. DMH Requirements

- C. All on-site workers will be required to wear identifying name badges.

- D. The Contractor shall supervise the use of the Site related to construction and be responsible for correcting any damage identified by DMH to DMH's satisfaction.
 - 1. An existing conditions survey shall be conducted prior to any work being performed with the DMH Project Engineer and the DMH Site Director or their representatives.

- E. All available existing utilities adjacent to the construction site will be available for use during construction unless indicated otherwise. These utilities would include water, sewer, and electricity. Temporary connections to these utilities, all metering, transformers, removal, usage, and their associated costs will be the responsibility of the Contractor.

- F. All apparatus, storage, and the operation of workmen in connection with activities under this Section shall be confined to limits of the Contract. Storage will not be permitted on the property without the approval of the DMH Project Manager.

- G. All parking regulations shall be observed.

- H. All vehicles carrying loose, dry material, demolition refuse, construction debris, etc., shall be covered by tarpaulins to prevent blowing away or spillage of contents. All spillage of whatever nature shall be promptly taken up and removed.

1-14 COORDINATION

- A. The Contractor shall be responsible for the proper fitting of all the work and for the coordination of the operations of all trades, subcontractors or material and men engaged upon the work. The Contractor shall do, or cause his agents to do, all cutting, fitting, adjusting, and repair necessary in order to make the several parts of the work come together properly.
 - 1. Examine Contract Documents in advance of start of construction and identify in writing questions, irregularities, or interference to the DMH Project Manager in writing. Failure to identify and address such issues in advance becomes the sole responsibility of the Contractor.
- B. Execute the work in an orderly and careful manner with due regard to the occupants of the facility, the public, the employees, and the normal function of the facility.
- C. The work sequence shall follow the planning of the schedule established by the Contractor and as approved by the DMH Project Manager. The work upon the site of the project shall commence promptly and be executed with full simultaneous progress. Work operations which require the interruption of utilities, service, and access shall be scheduled so as to involve minimum disruption and inconvenience, and to be expedited so as to insure minimum duration of any periods of disruption or inconvenience.
- D. The Contractor shall review the tolerances established in the specifications for each type of work and as established by trade organizations. The Contractor shall coordinate the various trades and resolve any conflicts that may exist between trade tolerances without additional cost to DMH. The Contractor shall provide any chipping, leveling, shoring or surveys to ensure that the various materials align.
- E. The Contractor shall coordinate all work that impacts the fire suppression and alarm system with the Fire Alarm Company including preparation, demolition, modernization, and testing. Costs associated with the Fire Alarm Company that are directly related to this Contract are to be included in the Contract price.
- F. The Contractor shall coordinate all work that impacts the emergency generator system with the Emergency Generator Company including preparation, demolition, modernization, and testing. Costs associated with the Emergency Generator that are directly related to this Contract are to be included in the Contract price.

1-15 REFERENCE STANDARDS

- A. For products specified by association or trade standards, comply with requirements for the standard, except where more rigid requirements are specified or are required by codes. Refer to the specific Specification for specific references.
- B. Where reference is made in the Contractual Documents to Publications and Standards issued by Associations or Societies, the intent shall be understood to specify the current edition of such Publications or Standards (including tentative revision) in effect on the date of the contract advertisement notwithstanding any reference to a particular date.

1-16 PRECONSTRUCTION CONFERENCE

- A. In accordance with Article V of the CONTRACT AND GENERAL CONDITIONS, a pre-construction conference to review the work will be conducted by the DMH Project Engineer.
- B. Representatives of the following shall be required to attend this conference:
 - 1. The Vertex Companies Project Manager
 - 2. DMH Project Engineer
 - 3. DMH Site Director
 - 4. Contractor
 - 5. All Subcontractors
- C. The Contractor shall have a responsible representative at the pre-construction conference to be called by the DMH Project Manager following the award of the Contract, as well as representatives of field or office forces and major subcontractors. All such representatives shall have authority to act for their respective firms. The pre-construction conference is to be held within five days of Notice to Proceed, or as otherwise determined by DMH.

1-17 WORK BY DMH

- A. DMH will provide Site Access
- B. DMH will designate parking and staging areas.
- C. DMH will designate areas for the locations for loading and unloading the majority of materials to and from the building.
- D. Sanitary facilities may be available at the Site depending upon the status of proposed renovations to existing bathrooms within the building and will be designated by the DMH Facility Manager. The Contractor is expected to maintain a clean and sanitary condition in available restrooms. If he

existing bathrooms are under construction, then the contractor may need to supply on site porta potty for workers.

- E. Stairs and passenger elevator may be used for personnel, removing minimal debris, and delivering minimal materials.

1-18 SUBCONTRACTORS

- A. After selection, the successful Bidder shall submit a list of subcontractors proposed for the performance of the Work to DMH for approval. The list shall include the name, address, contact person, and MA tax identification number for each subcontractor.

1-19 SECURITY REQUIREMENTS

- A. The Contractor shall familiarize himself with DMH's security requirements and shall always abide by and conform to such established regulations. The Contractor shall submit a list of personnel who will be responsible for the rehabilitation work and the maintenance service. List shall be kept current by Contractor.
- B. Criminal Offender Record Information Check. All on-site employees and/or prospective employees of Contractor and Subcontractors working on this project are subject to a CORI (Criminal Offender Record Information) check pursuant to Chapter 6 of the Massachusetts General Laws. All on-site personnel must meet this requirement before being allowed on site.
- C. Proper identification must be worn at all times.

1-20 SAFETY REQUIREMENTS

- A. The Contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state, and federal requirements that are safety related. All Contractor and subcontractor employees shall be instructed daily to be mindful of the fulltime requirements to maintain a safe environment for the facility occupants including staff, visitors, clients, and the occurrence of the general public on or near the Site.
- B. OSHA Safety and Health Course Documentation Records: Chapter 306 of the Massachusetts Acts of 2004 requires that everyone employed at the jobsite must complete a minimum 10-hour long course in construction safety and health approved by the U.S. Occupational Safety and Health Administration (OSHA) prior to working at the jobsite. Compliance is required for the Contractor's and subcontractors' on-site employees at all

levels. This requirement does not apply to home-office employees visiting the Site or to suppliers' employees who are making deliveries.

- C. Documentation records shall be initially compiled by the Contractor and subcontractors as part of certified payrolls, and the Contractor shall create and maintain a copy of the documentation on-site at all times.
- D. All accident reports are to be transmitted to the DMH Project Manager within 24 hours of occurrences.

1-21 SPECIAL REQUIREMENTS

- A. The Contractor shall take precautions to prevent the spread of dust and debris, particularly where such materials may shift inside the building. The Contractor shall provide labor and materials to construct, maintain, and remove necessary temporary enclosures to prevent dust or debris in the construction area from entering the remainder of the building.
- B. Work shall be conducted in a manner to afford maximum protection of building, facilities, employees and the public and to prevent unreasonable delay or interference with normal functioning of the building.
- C. The Contractor shall meet with the MHC's Director of Environmental Health & Safety and Infection Control Coordinator to develop a Pre-Construction Infection Control Risk Assessment ("ICRA") prior to the commencement of any construction. The ICRA will include, but not be limited to such topics as: Air Quality, Infection Control, Noise & Vibration, Debris Removal, Utilities, Emergency Procedures, and Interim Life Safety Measures. Once approved, the Contractor will be required to comply with the terms of the ICRA throughout the project. The MHC shall have the authority to enforce the terms of the ICRA, if applicable.
- D. All Contractor's employees who will be working inside the Allen Building will be required to attend an orientation, which will be provided by the facilities' Safety Officer, prior to working in the building. The orientation will include, but not be limited to such topics as: Patient Security, Safety, Smoking, Fire Safety, Debris Removal, Infection Control, and Hazard Communication.

1-22 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Designer and paid for by Owner.
 - 1. Submit a separate Application for Payment for each project.

2. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
 3. Each Application shall include the following:
 - a. Contractor's invoice on company's letterhead.
 - b. Updated Contractor's construction schedule showing current progress.
 - c. Updated Subcontractor list and contract values.
 - d. Certified payroll records.
 - e. Updated submittal log and schedule.
 - f. Other submittals as requested by Owner or Designer.
- B. Initial Application for Payment: Administrative actions and submittals that must precede and be approved prior to with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of Values, which meets the requirements of the Specifications.
 3. Contractor's Construction Schedule (preliminary if not final), which meets the requirements of the Specifications.
 4. Submittals Schedule (preliminary if not final), which meets the requirements of the Specifications.
 5. List of Contractor's staff assignments and OSHA Cards.
 6. CORI list of approved screened personnel with Owner's Project Engineer.
 7. Superintendent's resume.
 8. Copies of building permits.
 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 10. Preliminary list of contractors and subcontractors, with contract dollar amounts and list of scope of work included with contract.
 11. Other submittals deemed necessary by Owner or Designer.
- C. 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, minus portions of the work that are incomplete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
- D. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 - a. Certificate of Substantial Completion -E-1

- b. Certificate of Final Inspection, Release and Acceptance -
E-2
- 2. Submittal binder with product data and warranties.
- 3. The contractor shall submit a sworn and notarized affidavit with the final request for payment, stating that all payrolls, bills for materials and equipment, and other indebtedness connected with the work for which the owner might be responsible has been paid or otherwise satisfied.

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

**SECTION 013300
SUBMITTALS**

PART 1 – GENERAL

1-01 PROVISIONS INCLUDED

- A. Attention is directed to the CONTRACT and GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS which are hereby made a part of this Section of the specification.

1-02 REQUIREMENTS

- A. Shop drawings, product data, samples and schedules of values.

1-03 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- A. General:

Review and submit to the Project Engineer, shop drawings, product data and samples required by specification Section.

- B. Shop Drawings:

- 1. Original drawings shall be prepared by General Contractor, Subcontractor, supplier or distributor, which illustrates some portion of the work showing the fabrication, layout, setting or erection details.
 - a. Shop drawings shall be prepared by a qualified detailer.
 - b. Details shall be identified by reference to sheet and detail number shown on contract drawings.
 - c. Maximum sheet size shall be 30 inch by 42 inch.
 - d. Reproductions for submittals shall be reproducible transparencies with the required number of opaque prints specified herein.

- C. Project Data:

- 1. Manufacturer's standard schematic drawings:
 - a. Modify drawings to delete information which is not applicable to project.
 - b. Supplement standard information to provide additional information applicable to project.
- 2. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data:

- a. Clearly mark each copy to identify pertinent materials, products or models.
 - b. Show dimensions and clearances required.
 - c. Show performance characteristics and capacities.
 - d. Show wiring diagrams and controls.
- D. Samples: Physical examples to illustrate materials, equipment or workmanship, and to establish standards by which completed work is judged.
1. Office Samples: Of sufficient size and quantity to clearly illustrate:
 - a. Functional characteristics of product or materials, with integrity related parts and attachment devices.
 - b. Full range of color samples.
 - c. After review, approved samples may be incorporated into the project construction if not retained for comparison.
- E. General Contractors Responsibilities:
1. Coordinate each submittal with requirements of work and contract documents.
 2. The General Contractors responsibility for errors and omissions in submittals is not relieved by The Vertex Companies' review of submittals.
 3. Notify the Project Engineer in writing at time of submission, of deviations in submittals from requirements of contract documents or previous submissions.
 4. Work that requires submittals shall not commence unless submittals have The Vertex Companies' stamp and initials or signature indicating review and approval.
 5. After review, distribute required copies.
- F. Submission Requirements:
1. Make submittals promptly and in such sequence as to cause no delay in the work.
 2. Submit one (1) Portable Document Format (PDF) file of shop drawings, and number of hard copies of product data which contractor requires for distribution, plus two (2) hard copies which will be retained by the Project Engineer.
 3. Submit number of samples specified in each specification Section.
 4. Forward submittals with transmittal letter.
 5. Submittals shall include:
 - a. Date and revision date.
 - b. Project title.
 - c. The names of:

1. General Contractor
 2. Subcontractor
 3. Supplier
 4. Manufacturer
- d. Identification of product or material.
 - e. Relation to adjacent structure of materials.
 - f. Field dimensions, clearly defined as such.
 - g. Specification Section number.
 - h. Applicable standards, such as ASTM number.
 - i. A blank space 5 inches by 4 inches, for the Engineer's stamp.
 - j. Identification of deviations from contract document.
 - k. General Contractors stamp, initialized or signed, certifying review and approval of submittals.

G. Resubmission Requirements:

1. Shop Drawings:
 - a. Drawings, data or samples shall be designated approved, approved as noted, revise and resubmit or rejected.
 - b. Revise drawings as required and resubmit as specified for previous submittal.
2. Product Data and Samples: Submit new data and samples as required from previous submittals.

H. Distribution of Submittals after Review:

1. Distribute copies of shop drawings and project data which display Project Engineer's stamp to appropriate Subcontractors.

1-04 SCHEDULE OF VALUES

- A. Prior to the first request for payment, the General Contractor shall submit to the Project Engineer a Schedule of Values of the various portions of the work in sufficient detail to reflect various major components of each trade, including quantities when requested, aggregating the total contract sum, and divided so as to facilitate payments for work under each Section. Each item in the Schedule of Values shall include its proper share of overhead and profit. This schedule shall be used only as a basis for the contractor's request for payment.

1-05 SUBCONTRACT LIST

- A. Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or

equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.
4. Number of Copies: One (1) PDF copy.
 - a. Mark up and retain one returned copy as a Project Record Document.

1-06 THE VERTEX COMPANIES ACTION

- A. General: The Vertex Companies will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: The Vertex Companies will review each submittal, make marks to indicate corrections or modifications required, and return it. The Vertex Companies will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
 1. "REVIEWED": The portion of Work covered by the submittal may proceed provided it complies with the Contract Documents.
 2. "REVIEWED WITH NOTATIONS": The portion of Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal, and with the Contract Documents.
 3. "REVISE AND RESUBMIT" or "DISAPPROVED": Revise or prepare a new submittal in accordance with notations; resubmit. Do not proceed with that portion of the Work covered by the submittal.
- C. Informational Submittals: Project Engineer will review each submittal and will not return it or will return it if it does not comply with requirements. Project Engineer will forward each submittal to appropriate party.
- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review, as "DISAPPROVED."
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

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

**SECTION 015000
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

PART 1 – GENERAL

1-01 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT and GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1-02 DESCRIPTION

- A. The contractor shall be responsible for providing and maintaining temporary construction facilities and controls as specified herein.

1-03 HOISTING EQUIPMENT AND MACHINERY

- A. All hoisting equipment and machinery required for the proper and expeditious prosecution and progress of the work shall be furnished, installed, operated and maintained in safe condition by the General Contractor for the use of all Subcontractor's material and/or equipment delivered to the designated hoisting area except that which is specifically required to be provided by the Subcontractors themselves and is so stated in each appropriately related Section of the Specifications. All costs for hoisting operating services shall be borne by the General Contractor unless specifically accepted in the Contract Documents.

1-04 STAGING AND TEMPORARY LADDERS, RAMPS, RUNWAYS, ETC.

- A. All staging, exterior and interior, required to be over eight feet in height, shall be furnished and erected by the General Contractor and maintained in safe condition by him without change to, and for the use of all trades as needed by them for proper execution of their work, except where specified to the contrary in any filed sub-bid Section of the Specifications.

1-05 DUST CONTROL

- A. The General Contractor shall provide adequate means for the purpose of preventing dust caused by construction operations throughout the period of the construction contract.
- B. This provision does not supersede any specific requirements for methods of construction or applicable general conditions set forth in the contract articles with added regard to performance obligations of the General Contractor.

- C. The General Contractor shall provide and maintain floor mats at access points to prevent the tracking of dust.
- D. Dust Protection: Turn the ventilation system off and protect HVAC supply and return openings from dust infiltration during dust producing activities (i.e., drywall installation and finishing.) Provide temporary ventilation as required.

1-06 NOISE CONTROL

- A. Develop and maintain a noise-abatement program and enforce strict discipline over all personnel to keep noise to a minimum.
- B. Execute construction work by methods and by use of equipment which will reduce excess noise.
 - 1. Equip air compressors with silencers and power equipment with mufflers.

1-07 ENCLOSURES

- A. Provide temporary, insulated, weathertight closures of openings in exterior surfaces for providing acceptable working conditions and protection of materials, allowing for heating during construction, and preventing entry of unauthorized persons. Provide doors with self-closing hardware and locks.
- B. Provide temporary partitions and ceilings as required to separate work areas from User Agency's occupied areas, to prevent penetration of dust and moisture into User Agency's occupied areas, to prevent damage to existing areas and equipment. Construction shall be framing and sheet materials with closed joints and sealed edges at intersections with existing surfaces; STC rating 35 in accordance with ASTM E90.

1-08 CLEANING DURING CONSTRUCTION

- A. Unless otherwise specified under the various trade Sections of the Specifications, the General Contractor shall perform clean-up operations during construction as herein specified.
- B. Control accumulation of waste materials and rubbish and periodically dispose of off-site. The general contractor shall bear all costs, including fees resulting from such disposal.
- C. Store volatile wastes in covered metal containers and remove from premises.

- D. Prevent accumulation of wastes which create hazardous conditions.
- E. Provide adequate ventilation during use of volatile or noxious substances.
- F. Conduct cleaning and disposal operation to comply with local ordinances and anti-pollution laws.
 - 1. Do not burn rubbish and waste materials on site.
 - 2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
- G. Use only those materials which will not create hazards to health or property, and which will not damage surfaces.
- H. Use only those cleaning materials and methods recommended by manufacturer of surface materials to be cleaned.
- I. Provide on-site containers for collection of waste materials, debris and rubbish.
- J. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas off the construction site.

1-09 SUPPLEMENTAL GUIDELINES FOR CONSTRUCTION

- A. COVID-19 Requirements for Vendors, Contractors and Persons Conducting Business on the Hadley Building:
 - 1. Vaccination is required. Contractor must certify that their employees working on the Hadley Building campus are vaccinated or, if falling under religious or medical exemption, are being tested weekly. Individuals must be prepared to show proof of vaccination or negative COVID-19 test result upon request.
 - 2. Daily, Superintendent shall screen each employee using DMH FACILITIES COVID-19 SCREENING form
- B. Limiting Exposures:
 - 1. Workers should follow the General On-the-Job Guidance to Prevent Exposure & Limit the Transmission of the Virus of the COVID-19 Employee Health, protection, guidance and prevention guide.
 - 2. In addition, Contractors should advise workers of best practice to limit exposures off the construction site.

3. When leaving a construction site for breaks, lunch, or other reasons are required to wash hands with soap for at least 20 seconds or use an alcohol-based hand sanitizer with at least 60% ethanol or 70% isopropanol before leaving the site and must maintain social distancing if traveling to other locations off the construction site. Frequent use of handwashing or alcohol-based hand sanitizers should be encouraged and handwashing facilities and/or alcohol-based hand sanitizers should be made readily available at work sites.

C. Worker Infection Protocol:

1. As provided in the guidance document, there is a zero tolerance for sick workers reporting to work. Employees should be instructed that even those with mild symptoms of respiratory infection (cough, shortness of breath, sore throat) or fever should stay off work. Contractors shall take immediate steps to limit infections at the job site in the event that a worker discovered to have tested positive for COVID-19 or has COVID-19 related symptoms.
2. Although it is understood that contractors are enforcing Work Site Risk Prevention Practices including social distancing rules and use of PPE, consistent with guidelines it is also recognized that there may be occasions where someone who has tested positive for COVID-19 or who has COVID-19 symptoms has been present in a work area.
3. Prompt identification and isolation of potentially infectious individuals is a critical step in protecting workers, vendors, visitors, and others at a worksite.
 - a. **IDENTIFICATION OF EXPOSURE.** The Contractor shall direct workers with COVID-19 related symptoms to leave the jobsite immediately and contact their healthcare provider. The Massachusetts Department of Health (DPH) or a local board of health will make appropriate notifications to those who had direct prolonged contact with the COVID-19 positive workers.
 - b. **NOTIFICATION AND QUARANTINE REQUIREMENTS.** As provided by law, the identity of the worker must be kept confidential. Upon learning of an infection, the contractor must immediately notify the designated COVID-19 safety officer, the site safety officer, and the owner.
 - c. **SANITIZATION REQUIREMENTS.** Contractor shall take immediate steps to sanitize common areas and direct workplaces. This includes all on-site bathrooms facilities, any break facilities, and any other common areas on the job site that may have been in close contact with the infected

worker. Sanitation will be conducted with personnel, equipment, and material approved for COVID-19 sanitization. Identified areas should remain isolated from workers until sanitation process has been completed and area is deemed safe for use.

- d. RETURNING TO WORK. All impacted workers should follow CDC and DPH recommended steps concerning return to work. Workers who are considered close contacts to a COVID19 case by public health authorities should not return for 14 days and are subject quarantine by public health. Workers who leave during the workday due to COVID-19 symptoms and develop COVID-19 as confirmed by laboratory testing or diagnosis by a healthcare provider shall not return to the site until either released from isolation by healthcare provider or public health.
- e. IN ALL CASES, keep all employee names confidential as required by law. Other employees may be sent home while a workspace is being cleaned but will return to work after cleaning unless advised otherwise by a health care provider. Other employees should be asked to contact their health provider if they have any questions Remind other employees to continue to practice proper sanitation and monitor for flu like symptoms.

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

**SECTION 016000
PRODUCT REQUIREMENTS**

PART 1 – GENERAL

1-01 GENERAL PROVISIONS

Attention is directed to the CONTRACT and GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1-02 PRODUCTS

- A. Products include material, equipment and systems.
- B. Comply with Specifications and referenced standards as minimum requirements.
- C. Components required to be supplied in quantity within a specification section shall be the same and shall be interchangeable.
- D. Do not use materials and equipment removed from existing structures, except as specifically required, or allowed, by the contract documents.

1-03 WORKMANSHIP

- A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- B. Perform work by persons qualified to produce workmanship of specified quality.
- C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration and racking.

1-04 MANUFACTURER'S INSTRUCTIONS

- A. When work is specified to comply with manufacturer's instructions, submit copies as specified in Section 013300, SUBMITTALS.
- B. Perform work in accordance with details of instructions and specified requirements.

1-05 TRANSPORTATION AND HANDLING

- A. Refer to CONTRACT and GENERAL CONDITIONS and Specifications Sections for requirements pertaining to transportation and handling of materials and equipment.
- B. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.
- C. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
- D. Promptly inspect shipments to assure that products comply with requirements, that quantities are correct, and products are undamaged.

1-06 STORAGE AND PROTECTION

- A. Refer to CONTRACT and GENERAL CONDITIONS and Specifications Sections for requirements pertaining to storage and protection of materials and equipment.
- B. Provide Steel Storage Container to house seventy-four (74) anti-barricade door systems provided by Owner, and coordinate delivery on the site with supplier.
- C. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weathertight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.
- D. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
- E. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.
- F. Arrange storage to provide access for inspection. Periodically inspect to assure that products are undamaged and are maintained under required conditions.

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

**SECTION 017000
CLOSEOUT PROCEDURES**

PART 1 – GENERAL

1-01 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT and GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1-02 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
1. Inspection procedures.
 2. Warranties.
 3. Final cleaning.
- B. Related Sections include the following:
1. Division 01 Section "Summary" for overall Project schedule.
 2. Division 01 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
 3. Division 01 Section "Execution" for progress cleaning of Project site.
 4. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
 5. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 6. Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
 7. Divisions 02 through 33 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1-03 SUBSTANTIAL COMPLETION

- A. For purposes of this Section, Substantial Completion refers to Substantial Completion of each Phase. In the event of any question or dispute as to the date of Substantial Completion, such question or dispute shall be determined by the Designer in its sole discretion, and neither the Designer nor the Owner shall have any liability to the Contractor arising out of such determination made by the Designer in good faith.

B. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Prepare and submit Project Record Documents, operation and maintenance manuals, and similar final record information.
5. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
6. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
7. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
8. Complete final cleaning requirements, including touchup painting.
9. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

C. Date of Substantial Completion: The Date of Substantial Completion of the Work, or any designated portion thereof, is the date certified by the Designer when the requirements of the Contract Documents have been satisfied. Substantial Completion of the Work shall not be deemed to be achieved until:

1. The Owner can occupy or utilize the Work, or designated portion thereof, for the use for which it is intended; and
2. only minor items of Work remain incomplete, which minor items of Work may be completed without interference with the Owner's intended use of the Work; and
3. the minor items of Work remaining incomplete do not exceed one percent (1%) of the Contract Sum; and
4. all certificates of inspection, testing and approval, including certificates of occupancy and operating permits for elevators and any mechanical apparatus, which may be required by law to permit full use and occupancy of the completed Work by the Owner, have been actually obtained by the Contractor; and
5. all operating and maintenance manuals, warranties and guarantees, parts lists, repair source lists and samples, and all other similar documents or materials required to be delivered to the Owner

- under the Contract Documents have been delivered to, and approved by, the Architect; and
6. the Contractor has complied with all other obligations under the Contract Documents

- D. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Designer will either proceed with inspection or notify Contractor of unfulfilled requirements. Designer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Designer, which must be completed or corrected before certificate will be issued.
1. Designer will provide one inspection and one reinspection.
 2. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 3. Results of completed inspection will form the basis of requirements for Final Completion.

1-04 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit certified copy of Designer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Designer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 2. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 3. Submit lien waivers and/or certificate of payment received, as required by Owner, from all subcontractors.
 4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Designer will either proceed with inspection or notify Contractor of unfulfilled requirements. Designer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1-05 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit a list including name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 - 1. Organize list of spaces in sequential order.
 - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

1-06 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Designer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

1-07 FINAL CLEANING

- A. Unless otherwise specified under the various Sections of the Specifications, the General Contractor shall perform final cleaning operations as herein specified prior to final inspection.
- B. Maintain project site free from accumulations of waste, debris, and rubbish caused by operation. At completion of work, remove waste materials, rubbish, caused by operation. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave project clean and ready for occupancy.

- C. Cleaning shall include all surfaces, interior and exterior in which the General Contractor has had access whether existing or new.
- D. Refer to Section of the Specifications for cleaning or specific products or work.
- E. Use only those materials which will not create hazards to health or property, and which will not damage surfaces.
- F. Use only those cleaning materials and methods that are recommended by the manufacturer of surface material to be cleaned.
- G. Employ experienced workmen or professional cleaners for final cleaning operations.
- H. Remove grease, mastic, adhesives, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior surfaces.
- I. Wash and polish mirrors.
- J. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
- K. Polish glossy surfaces to a clear shine.
- L. Prior to final completion, or User Agency Use and Occupancy, the General Contractor shall conduct an inspection of sight-exposed interior and exterior surfaces, and all work areas, to verify that the entire work is clean.

1-08 RECORD DRAWINGS

- A. Record Drawings shall consist of **all** the contract drawings.
- B. The General Contractor and all Subcontractors shall be required to maintain one set of Record Drawings, as the work relates to their Sections of the Specifications, at the site.

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

SECTION 072110 - INSULATION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Furnish all labor, materials, equipment, and appliances necessary or required to perform and complete all work including, but not limited to, the following:
 - 1. Blanket/batt-type insulation.

1.2 QUALITY ASSURANCE

- A. Fire Performance Characteristics: Provide insulation materials and assemblies which are identical to those whose fire performance characteristics, as listed for each material or assembly of which insulation is a part, have been determined by testing, by UL or other testing and inspection agency acceptable to authorities having jurisdiction:
 - 1. Surface Burning in Characteristics: ASTM E 84.
 - 2. Fire Resistance Ratings: ASTM E 119.
 - 3. Combustion Characteristics: ASTM E 136.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's product literature and installation instructions for each type of insulation material required.
- B. Certified Tests Reports: With product data, submit copies of certified test reports showing compliance with specified performance values, including r-values, densities, fire performance, perm ratings, water absorption ratios and similar properties.

1.4 DELIVERY, STORAGE & HANDLING

- A. General Protection: Protect insulations from damage. Comply with manufacturer's recommendations for handling, storage and protection.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Insulation: Subject to compliance with requirements, provide glass fiber insulation of the following, or approved equal:
 - 1. CertainTeed Corp.
 - 2. Manville Corp.
 - 3. Owens-Corning Fiberglass Corp.
 - 4. Dow Chemical Co.

2.2 INSULATING MATERIALS

- A. Faced and Unfaced Blanket/Batt Insulation: Mineral or glass fiber insulation to comply with ASTM C 665 for Type I (unfaced) and Type III (reflective vapor retarder membrane facing), Class A, and as follows:
 - 1. Combustion Characteristics: Passes ASTM E 136 test.
 - 2. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50, respectively.

PART 3 - EXECUTION

3.1 INSPECTION AND PREPARATION

- A. Examine substrates and conditions under which insulation work is to be performed. Submit a report listing conditions detrimental to performance of work in this section.
- B. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected to permit proper installation of the work.
- C. Clean substrates of substances harmful to insulations, including removal of projections which might interfere with installation of insulation.

3.2 INSTALLATION, GENERAL

- A. Comply with manufacturer's instructions for particular conditions of installation. If printed instructions are not available or not applicable, consult manufacturer's technical representative for specific recommendations before proceeding with work.
- B. Extend insulation full thickness as shown over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections which interfere with placement.
- C. Install a single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.

3.3 INSTALLATION OF BUILDING INSULATION

- A. Extend insulation full thickness as shown over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation.

3.4 PROTECTION

- A. Protect installed insulation from harmful weather exposures and from physical abuse.

END OF SECTION 072110

SECTION 081113 - METAL DOOR FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:
 - 1. Interior standard door frames.

1.3 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or ANSI/SDI A250.8.

1.4 COORDINATION

- A. Coordinate anchorage installation for metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.
- B. Coordinate requirements for installation of door and door hardware.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, core descriptions and finishes.
- B. Shop Drawings: Include the following:

1. Elevations of each door frame type.
 2. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 3. Locations of reinforcement and preparations for hardware.
 4. Details of each different wall opening condition.
 5. Details of anchorages, joints, field splices, and connections.
 6. Details of moldings and removable stops.
- C. Product Schedule: For door frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware schedule.

1.6 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each type of thermally rated door assemblies for tests performed by a qualified testing agency indicating compliance with performance requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver metal frames palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
1. Provide additional protection to prevent damage to factory-finished units.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store frames vertically under cover at Project site with head up. Place on minimum 4-inch- high wood blocking. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Ceco Door; ASSA ABLOY.
 2. Curries Company; ASSA ABLOY.
 3. Deansteel Manufacturing Company, Inc.
 4. Fleming Door Products Ltd.; Assa Abloy Group Company.
 5. Gensteel Doors, Inc.
 6. Karpen Steel Custom Doors & Frames.
 7. LaForce, Inc.
 8. Mesker Door Inc.
 9. Pioneer Industries.

10. Republic Doors and Frames.
11. Steelcraft; an Allegion brand.

2.2 INTERIOR STANDARD STEEL FRAMES

- A. Construct frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Heavy-Duty Frames: ANSI/SDI A250.8, Level 2; ANSI/SDI A250.4, Level B.
 1. Frames:
 - a. Materials: Uncoated steel sheet, minimum thickness of 0.053 inch.
 - b. Construction: Full profile welded
 2. Exposed Finish: Prime.

2.3 FRAME ANCHORS

- A. Jamb Anchors:
 1. Type: Anchors of minimum size and type required by applicable frame standard, and suitable for performance level indicated.
 2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches of frame height above 7 feet.
- B. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor.
- C. Material: ASTM A879/A879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.

2.4 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A1008/A1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A153/A153M.
- C. Mineral-Fiber Insulation: ASTM C665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E136 for combustion characteristics.

2.5 FABRICATION

- A. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.
 1. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners

- unless otherwise indicated.
2. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
 - B. Double-Door Frames: Drill stop in head jamb to receive two door silencers.
 - C. Hardware Preparation: Factory prepare frames to receive templated mortised hardware, include cutouts, reinforcement, mortising, drilling, and tapping according to ANSI/SDI A250.6, the Door Hardware Schedule, and templates.
 1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
 2. Comply with BHMA A156.115 for preparing hollow-metal doors and frames for hardware.

2.6 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.
- B. Drill frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.2 INSTALLATION

- A. Install hollow-metal doors and frames plumb, rigid, properly aligned, and securely fastened in place. Comply with approved Shop Drawings and with manufacturer's written instructions.
- B. Hollow-Metal Frames: Comply with ANSI/SDI A250.11.
 1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.
 - a. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush,

- and invisible on exposed faces. Touch-up finishes.
- b. Install frames with removable stops located on secure side of opening.
2. Floor Anchors: Secure with postinstalled expansion anchors.
 - a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
 3. Solidly pack mineral-fiber insulation inside frames.
 4. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

3.3 REPAIR

- A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- B. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION 081113

SECTION 081400 - WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Commercial Wood Doors.

1.2 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 01 Submittal Procedures Section.
- B. Product Data: Submit manufacturer's product data and installation guides.
- C. Shop Drawings: Provide drawings indicating direction of operable parts, typical jamb, head and sill conditions, and special mullion reinforcement details.
- D. Color Samples: Submit selection and verification samples, including the following:
 - 1. Hardware: Submit samples indicating typical finish on window hardware.
 - 2. Cladding: Submit color Samples of aluminum cladding.
- E. Quality Assurance/Control Submittals: Submit the following:
 - 1. Performance Data: Provide manufacturer's published performance data for specified products.
- F. Contract Closeout Submittals: Submit the following:
 - 1. Warranty documents specified herein.
 - 2. Owner's Manual: Bound manual clearly identified with project name, location, and completion date. Identify type and size of units installed. Provide recommendations for periodic inspections, care, and maintenance. Identify common causes of damage with instructions for temporary repair.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- B. Delivery: Deliver materials in manufacturer's original unopened, undamaged containers with identification labels intact.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
- D. Store materials and accessories off ground, under cover, and protected from weather and construction activities.

1.5 PROJECT/SITE CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication. Record measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.
- B. Install units in accordance with manufacturer's safety and weather requirements.

1.6 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project Warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard limited warranty document. Manufacturer's limited warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Provide products from the following manufacturer:
 - 1. Andersen Windows, Inc.
100 4th Ave. N.
Bayport, MN 55003-1096.
Phone: (800) 299-9029.
Fax: (800) 752-9230.
E-mail: technicalsupport@andersenwindows.com.
www.andersenwindows.com.

2.2 MANUFACTURED UNITS

- A. Wood doors, including the following:
 - 1. Andersen® Architectural Commercial Doors and Sidelights.
 - 2. Substitutions: Approved Equal.

2.3 MATERIALS

- A. Refer to Door Schedule and Notes on Architectural Drawings.

2.4 GLAZING

- A. Clear Single Pane Glass Units: Diamond Wire Safety Glass; tested, classified, and UL labeled in accordance with ANSI Z97.1 and CPSC 15CFR1201 CAT I and CAT II.

2.5 HARDWARE

- A. Hinges: 4-1/2 inch (114 mm) heavy duty ball bearing hinge with non-removable pin with the following finish:
 - 1. Finish: As selected by Owner.
- B. Locks: Refer to Division 08 Section, "Finish Hardware".

2.6 ACCESSORIES

- A. Interior Trim and Casing: Provide wood casing in the following specie and profile:
 - 1. Species: Finished Maple.
 - 2. 2-1/2" (57mm): Ranch WM315, or as selected by Owner.

2.7 FABRICATION

- A. Preservative Treatment: Treat wood frame members and interior glazing stops after machining with a water repellent preservative in accordance with WDMA I.S.4.
- B. Door Panel and Components:
 - 1. Refer to Door Schedule and Notes on Architectural Drawings.
- C. Glazing:
 - 1. Refer to Door Schedule and Notes on Architectural Drawings.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- A. Comply with the instructions and recommendations of unit manufacturer.

3.2 EXAMINATION

- A. Site Verification of Conditions: Verify that site conditions are acceptable for installation of units, including the following:
 - 1. Concrete surfaces are dry and free of excess mortar, rocks, sand, and other construction debris.
 - 2. Rough openings are square and dimensions are correct.
 - 3. Sill plates are level.
- B. Do not proceed with installation of units until unacceptable conditions are corrected.

3.3 INSTALLATION

- A. General:
 - 1. Remove unit components, parts, accessories, and installation guides from carton.
 - 2. Inspect unit components and verify that components are not damaged and that parts are included before disposing of carton.
 - 3. Shop-assemble multiple units before installation in accordance with manufacturer's installation guides.
 - 4. Field-assemble multiple units before installation in accordance with manufacturer's installation guides.
- B. Interface With Other Work:
 - 1. Perform installation in accordance with Manufacturer's instructions.
 - 2. Install units level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
 - 3. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

4. Install insulation in shim space around unit perimeter to maintain continuity of building insulation. Do not overfill.
5. Hold back exterior siding or other finish materials from edge of unit to allow for expansion and contraction and installation of proper joint sealant with backing materials. Seal perimeter of unit after exterior finish is applied per requirements of Division 07 "Joint Sealants" Section.
6. Finish interior units per requirements specified in related sections. Refer to, and comply with, additional requirements in manufacturer's installation guides.
7. Install optional hardware and unit accessories after cleaning.

C. Site Tolerances:

1. Adjust operation, insect screens, hardware, and accessories for a tight fit at contact points and weatherstripping for smooth operation and weathertight closure.

3.4 CLEANING

- A. Clean units using cleaning material and methods specifically recommended by window manufacturer.
- B. Remove excess sealants, glazing materials, dirt, and other substances.
- C. Avoid damaging protective coatings and finishes.
- D. Protect unit surfaces from masonry cleaning solution that could damage insulation glass panels or hardware.
- E. Remove debris from work site and properly dispose of debris.

3.5 PROTECTION

- A. Protect installed work from damage due to subsequent construction activity on the site.

END OF SECTION 081400

SECTION 087100 - FINISH HARDWARE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Furnish all labor, materials, equipment and appliances necessary or required to perform and complete all work including, but not limited to, the following:
 - 1. Furnish finish hardware required to complete the work as shown on the Drawings and as specified herein.
 - 2. Furnish trim attachments and fastenings, specified or otherwise required, for proper and complete installation.
 - 3. Deliver to the job site those items of finish hardware scheduled to be installed at the job site, and then deliver to other points of installation those items of finish hardware scheduled to be factory installed.

1.2 QUALITY ASSURANCE

- A. Perform the following:
 - 1. Inspect installation of all finish hardware items.
 - 2. Make all minor adjustments required.
 - 3. Report to the Owner on completeness of the installation.

1.3 SUBMITTALS

- A. Samples:
 - 1. Deliver to the Owner samples of each finish hardware item a minimum of three (3) weeks prior to installation.
 - 2. All samples will be returned to the Contractor, provide those samples which are approved by the Owner are positively identified and are installed in the work at locations agreed to by the Owner.
- B. Templates: In a timely manner to assure orderly progress of the work, deliver templates or physical samples of the approved finish hardware items to pertinent manufacturers of interfacing items such as door and frames.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver in ample time to facilitate the work to this Section.
- B. Individually package each unit of finish hardware, clearly marked to indicate contents and specific locations of use.

1.5 JOB CONDITIONS

- A. Use all means necessary to protect finish hardware, during and after installation.
- B. Remove and replace all work showing any defects or blemishes without additional expense to the Owner.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Fasteners:
 - 1. Furnish necessary screws, bolts, and other fasteners of suitable size and type to anchor the hardware in position for long life under hard use.
 - 2. Where necessary, furnish fasteners with toggle bolts, expansion shields, sex bolts, and other anchors approved by the Owner, according to the material to which the hardware is to be applied and according to the recommendations of the hardware manufacturer.
 - 3. Provide fasteners which harmonize with the hardware as to finish and material.
- B. Where butts are required to swing 180 degrees, furnish butts of sufficient throw to clear the trim.
- C. Furnish silencers for door frames at the rate of three for each single door and two for each door or pair of doors.

2.2 KEYING

- A. One side keyed to accept DMH 1-1/2" Best cylinder interchangeable keyway.

2.3 TOOLS AND MANUALS

- A. With the delivery of permanent keys, deliver to the Owner one complete set of adjustment tools and one set of maintenance manuals for locksets and latchsets.

2.4 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Owner.

PART 3 - EXECUTION

3.1 DELIVERIES

- A. Stockpile item sufficiently in advance to assure their availability, and make necessary deliveries in a timely manner to assure orderly progress of the total work.

3.2 COORDINATION

- A. Coordinate as necessary with other trades to assure proper and adequate provision in the work of those trades for interface with the work of the Section.
- B. Upon completion of the work, and as a condition of its acceptance, provide the inspection, adjustment and report described in Article 1.2 above.

3.3 FINISH HARDWARE SCHEDULE

Furnish hardware as specified Door Schedules and Notes of Contract Drawings.

END OF SECTION 087100

SECTION 091100 - METAL STUD SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Provide metal studs and accessories as indicated on the Drawings, as specified herein, and as needed for a complete and proper installation.

1.2 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Complying with pertinent codes and regulations of governmental agencies having jurisdiction.

1.3 SUBMITTALS

- A. Product data: Within ten (10) calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 - 1. Materials list of items proposed to be provided under this Section.
 - 2. Manufacturers' specifications and other data needed to prove compliance with the specified requirements.
 - 3. Manufacturers' recommended installation procedures which, when approved by the owner, will become the basis for accepting or rejecting actual installation procedures used on the Work.

PART 2 - PRODUCTS

2.1 METAL STUDS AND ACCESSORIES

- A. Meet or exceed minimum requirements of Fed Spec QQ-S-698 and Fed Spec QQ-S-775d, class D, for the item and use intended.
- B. Metal Studs:
 - 1. At interior metal stud partitions, unless otherwise shown on the Drawings, provide standard punched steel studs of the gauges or of a gauge to reduce detection of wall to L/360 as shown on the Drawings, either hot-dip galvanized or factory pre-painted.
 - 2. Use only one type throughout the Work, unless otherwise shown on the Drawings or specifically approved in advance by the owner.
- C. Accessories: Provide all accessories including, but not necessarily limited to, tracks, clips, anchors, fastening devices, sound attenuation pencil rods and resilient clips, and other

accessories required for a complete and proper installation, and as recommended by the manufacturer of the steel studs used.

2.2 GROUT

- A. Provide a good grade of commercial grout for leveling the floor runner member of steel stud partitions as required.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

- A. Accurately lay out partition and wall lines from the dimensions shown on the Drawings.
- B. Install metal studs and accessories in strict accordance with the manufacturer's recommendations as approved by the Architect anchoring all components firmly into position.
- C. Align partition and wall assemblies to a tolerance of one in 200 horizontally and one in 500 vertically.
- D. Coordination:
 - 1. Space the studs as required for compliance with pertinent regulations, to give proper support for the covering material, and as indicated on the Drawings.
 - 2. Coordinate and provide required backing and other support for items to be mounted on the finished covering.
 - 3. Coordinate requirements for pipes and other items designed to be housed within the partition and wall systems.

3.3 LEVELING

- A. By use of the specified grout, or by other means approved by the owner, provide continuous solid bearing under floor runner members of steel stud partitions and walls.
- B. Level in a manner to provide uniform interface with ceilings and other overhead construction.

END OF SECTION 091100

SECTION 092540 - GYPSUM WALLBOARD SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Furnish all labor, materials, equipment, and appliances necessary or required to perform and complete all work including, but not limited to, the following:
 - 1. Gypsum drywall and accessories where shown on the drawings, as specified herein, and as needed for a complete and proper installation.

1.2 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.3 SUBMITTALS

- A. Product data:
 - 1. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
 - 2. Manufacturer's recommended installation procedures which, when approved by the owner, will become the basis for accepting or rejecting actual installation procedures used on the Work.

PART 2 - PRODUCTS

2.1 GYPSUM WALLBOARD

- A. General:
 - 1. Provide gypsum wallboard complying with Fed Spec SS-L-30D, in 48" widths and in such lengths as will result in a minimum of joints.
 - 2. Fire-retardant wallboard: Provide type III, grade X, class 1, 5/8" thick.

2.2 METAL TRIM

- A. Form from zinc-coated steel not lighter than 26 gage, complying with Fed Spec QQ-S-775, type I, class d or e.
- B. Casing beads:
 - 1. Provide channel-shapes with an exposed wing, and with a concealed wing not less than 7/8" wide.
 - 2. The exposed wing may be covered with paper cemented to the metal, but shall be suitable for joint treatment.

- C. Corner beads: Provide angle shapes with wings not less than 7/8" wide and perforated for nailing and joint treatment, or with combination metal and paper wings bonded together, not less than 1-1/4" wide and suitable for joint treatment.
- D. Edge beads for use at perimeter of ceilings:
 - 1. Provide angle shapes with wings not less than 3/4" wide.
 - 2. Provide concealed wing perforated for nailing, and exposed wing edge folded flat.
 - 3. Exposed wing may be factory finished in white color.

2.3 JOINTING SYSTEM

- A. Provide a jointing system, including reinforcing tape and compound, designed as a system to be used together and as recommended for this use by the manufacturer of the gypsum wallboard approved for use on this Work.
- B. Jointing compound may be used for finishing if so recommended by its manufacturer.

2.4 FASTENING DEVICES

- A. For fastening gypsum wallboard in place on metal studs and metal channels, use flat-head screws, shouldered, specially designed for use with power-driven tools, not less than 1" long, with self-tapping threads and self-drilling points.
- B. For fastening gypsum wallboard in place on wood, use 1-1/4" type W bugle-head screws, or use annular ring type nails complying with ASTM C514 and of the length required by governmental agencies having jurisdiction.

2.5 OTHER MATERIAL

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Owner.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

- A. General:
 - 1. Install the gypsum wallboard in accordance with the Drawings and with the separate boards in moderate contact but not forced into place.
 - 2. At internal and external corners, conceal the cut edges of the boards by the overlapping covered edges of the abutting boards.

3. Stagger the boards so that corners of any four boards will not meet at a common point except in vertical corners.

B. Walls:

1. Install the gypsum wallboard to studs at right angles to the furring or framing members.
2. Make end joints, where required, over framing or furring members.

C. Attaching:

1. Drive the specified screws with clutch-controlled power screwdrivers, spacing the screws 12" on centers at ceiling and 16" on centers at walls.
2. Where framing members are spaced 24" apart on walls, space screws 12" on centers.
3. Attach double layers in accordance with the pertinent codes and the manufacturer's recommendations as approved by the owner.
4. Attach to wood as required by governmental agencies having jurisdiction.

3.3 JOINT TREATMENT

A. General:

1. Inspect areas to be joint treated, verifying that the gypsum wallboard fits snugly against supporting framework.
2. In areas where joint treatment and compound finishing will be performed, maintain a temperature of not less than 55 degrees for 24 hours prior to commencing the treatment, and until joint and finishing compounds have dried.
3. Apply the joint treatment and finishing compound by machine or hand tool.
4. Provide a minimum drying time of 24 hours between coats, with additional drying time in poorly ventilated areas.

B. Embedding compounds:

1. Apply to gypsum wallboard joints and fastener heads in a thin uniform layer.
2. Spread the compound not less than 3" wide at joints, center the reinforcing tape in the joint, and embed the tape in the compound. Then spread a thin layer of compound over the tape.
3. After this treatment has dried, apply a second coat of embedding compound to joints and fastener heads, spreading a thin uniform coat to not less than 6" wide at joints, and feather edged.
4. Sandpaper between coats as required.
5. When thoroughly dry, sandpaper to eliminate ridges and high points.

C. Finishing Compounds:

1. After embedding compound is thoroughly dry and has been completely sanded, apply a coat of finishing compound to joints and fastener heads.
2. Feather the finishing compound to not less than 12" wide.
3. When thoroughly dry, sandpaper to obtain a uniformly smooth surface, taking care to not scuff the paper surface of the wallboard.

3.4 CORNER TREATMENT

- A. Internal corners: Treat as specified for joints, except fold the reinforcing tape lengthwise through the middle and fit neatly into the corner.

- B. External corners:
 - 1. Install the specified corner bead, fitting neatly over the corner and securing with the same type fasteners used for installing the wallboard.
 - 2. Space the fasteners approximately 6" on centers, and drive through the wallboard into the framing or furring member.
 - 3. After the corner bead has been secured into position, treat the corner with joint compound and reinforcing tape as specified for joints, feathering the joint compound out from 8" to 10" on each side of the corner.

3.5 OTHER METAL TRIM

- A. General:
 - 1. The Drawings do not purport to show all locations and requirements for metal trim.
 - 2. Carefully study the Drawings and the installation, and provide all metal trim normally recommended by the manufacturer of the gypsum wallboard approved for use in this Work.

3.6 CLEANING UP

- A. In addition to other requirements for cleaning, use necessary care to prevent scattering gypsum wallboard scraps and dust, and to prevent tracking gypsum and joint finishing compound onto floor surfaces.
- B. At completion of each segment of installation in a room or space, promptly pick up and remove from the working area all scrap, debris, and surplus material of this Section.

END OF SECTION 092540

SECTION 096813 - TILE CARPETING

PART 1 GENERAL

1.01 REFERENCES

- A. AATCC - The American Association of Textile Chemists and Colorists, Research Triangle Park, NC 27709, www.aatcc.org.
- B. CRI – Carpet and Rug Institute, Dalton, GA 30722-2048, www.carpet-rug.com.

1.02 SUBMITTALS

- A. Shop Drawings: Show dimensions of carpeted areas, locations of edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, cutouts edge strips, and other installation details. Show details of special patterns.
- B. Product Data: Catalog sheets, specifications, and installation instructions for the following:
 - 1. Tile Carpeting:
 - a. Trade name and number.
 - b. Manufacturer.
 - c. Address of mill constructing carpet.
 - d. Construction type.
 - e. Gage.
 - f. Stitches per inch.
 - g. Pile height.
 - h. Face yarn.
 - i. Face yarn weight.
 - j. Weight density factor.
 - k. Primary backing.
 - l. Secondary backing.
 - m. Total weight.
 - n. Dye method.
 - o. Tuft bind.
 - p. Static resistance.
 - q. Flammability.
 - r. Edge strips.
 - 2. Vinyl base moulding
 - 3. Adhesive.
- C. Samples:
 - 1. Tile Carpeting: Full size piece of each type, color, and pattern specified.
 - 2. Edge Strip: 12 inches long, each type specified.
- D. Vinyl base moulding: 12 inches long, each type specified
 - 1. Color Samples: Manufacturer’s standard color samples of each type and pattern specified.
- E. Quality Control Submittals:
 - 1. Certificates: Affidavits required under Quality Assurance Article.

- F. Contract Closeout Submittals:
 - 1. Maintenance and Cleaning Instructions: Furnish 2 copies to the Director's Representative.
 - 2. Warranty: Copy of specified warranty.

1.03 QUALITY ASSURANCE

- A. Flammability Certification:
 - 1. Radiant Panel Flooring Flammability Test: NFPA 253. Class I, Minimum 0.45 watts per sq centimeter.
 - 2. Methenamine Tablet Test: DOC-FF-1-70 and ASTM D 2859. Meet the "Standards for the Surface Flammability of Carpets".
 - 3. Smoke Density Test: NFPA 258 and ASTM E 662. Specific optical density (DM) of 450 or less (flaming).
- B. Colorfastness to Light: AATCC 16, Option E. Minimum rating of 4 on grey scale after 80 hours exposure.
- C. Colorfastness to Crocking: AATCC 165. Minimum rating of 4 wet and dry.
- D. Appearance Retention Rating: ASTM D 5252. CRI TM-101 "Severe" rating.
- E. Stain Resistance: AATCC 175. Rating of 8 or better.
- F. Static Resistance: AATCC 134. 3.5 kv or less, at 70 degrees F and 20 percent RH.
- G. Tuft Bind: ASTM D 1335. Average pounds of force not less than 12 pounds.
- H. Dimensional Stability: Aachen Method DIN 54318, 0.2 percent or less.
- I. Installer Qualifications: The persons installing the tile carpeting and their Supervisor shall be experienced in carpeting installation, including the requirements of the tile carpeting manufacturer, and shall have been regularly employed by a company engaged in installation of carpeting for a minimum of 5 years.
- J. Certifications: Furnish certification from tile carpeting installer that the substrate surfaces have been examined and are acceptable for installation of the Work of this Section.
- K. Performance Criteria:
 - 1. The following criteria are REQUIRED for products included in this section:
 - a. All carpet installed in the building interior must meet the testing and product requirements of the Carpet and Rug Institute Green label Plus program.
 - b. All carpet products shall be certified to meet the NSF/ANSI 140-2007 Standard, Platinum level.
 - c. All carpet cushion installed in the building interior must meet the requirements of the Carpet and Rug Institute Green Label program.
 - d. All carpet adhesives shall have a maximum permitted volatile organic compound level of 50 g/L.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Deliver tile carpeting in original carpet mill packaging with each package having labels legible and intact.
- B. Store tile carpeting and related materials in an enclosed and dry area protected from damage and soiling.

1.04 PROJECT CONDITIONS

- A. Environmental Requirements: Make arrangements thru the Director's Representative for having the temperature in the spaces to receive tile carpeting maintained at 68 degrees F for 48 hours prior to flooring installation, during the installation, and for 72 hours after installation.
- B. Do not install the Work of this Section until painting, finishing Work, and Work of other trades has been completed.

1.05 WARRANTY

- A. Manufacturer's Warranty: Minimum 15 year wear warranty.

1.06 EXTRA MATERIALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Tile Carpeting: Full size units equal to 5 percent of amount installed, but not less than 5 square yards for each color, pattern and type of tile carpeting installed.

PART 2 PRODUCTS

2.01 CARPETING MANUFACTURERS

- A. InterfacFLOR, LaGrange, GA30240, (800) 336-0225, www.interfaceflor.com
- B. Mannington Mills, Inc, Calhoun, GA 30703, (800) 241-2262 www.mannington.com
- C. Milliken and Companyt, LaGrange, GA 30240 (706) 880-5345, www.millikencarpet.com
- D. ShawIndustries, Inct, Dalton, GA 30722 (877) 502-7429, www.shawcontractgroup.com

2.02 MATERIALS

- A. Type A Tile Carpeting: Tufted, Textured Loop Pile (Random Pattern):
 - 1. Fiber Type: 100 percent Type 6.6 Nylon.
 - 2. Minimum Face Yarn Weight: 20 oz.
 - 3. Maximum Pile Height (inches): .156.
 - 4. Minimum Pile Thickness (inches): .130.
 - 5. Minimum Stitches per Inch: 8.3.

6. Minimum Gage: 1/8.
 7. Minimum Density: 5000.
 8. Dye Method: Yarn Dyed, Injection Dyed, or Solution Dyed.
 9. Backing System: Manufacturer's standard vinyl or thermoplastic hard-backing or integral-cushion thermoplastic backing system, recyclable content, maintaining a 100 percent moisture barrier between secondary backing and the floor substrate. Pre-adhered backing system may be used as an alternate without an applied releasable adhesive to surface substrate.
 10. Size: 24 x 24 inches.
- B. Resilient Edge Strips: Not less than one inch wide, tapered bullnose edge, thickness and color as selected.
- C. Vinyl Base: FS SS-W-40, Type II; 4 inches high, 0.080 inch gage, with matching preformed external corner units.
1. Style: Standard straight (carpet) base.
 2. Adhesive and Filler/Wall Patch: As recommended by the base manufacturer for the type of substrate indicated.
 3. Colors: As selected from manufacturer's standard colors.
- D. Metal Edge Strips: Extruded aluminum, mill finish; butt type for concealed anchorage; countersunk stainless steel fasteners, with anchors suitable for substrate surface.
- E. Trowelable Leveling and Patching Compounds: Latex-modified Portland cement based or blended hydraulic-cement-based formulation provided or approved by tile carpeting manufacturer for application on substrate surface and grade level.
- F. Low VOC Flooring Adhesive and Joint Materials: Tile carpeting manufacturer's recommended water resistant materials formulated for low VOC (VOC Limit 50g/L less water) and for application on substrate and grade level.
- G. Cleaning Solvents: Low toxicity, and a flash point in excess of 100 degrees F.
- H. Wood Floor Primer: Tile carpeting manufacturer's recommended type.
- I. Liquid Floor Stripper: Tile carpeting manufacturer's recommended type.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine surfaces scheduled to receive tile carpeting for defects that will adversely affect the proper installation. Do not proceed until unsatisfactory conditions are corrected.

3.02 PREPARATION

- A. Clean floors of dust, dirt, solvents, oil, grease, loose paint, and other substances. Allow floors to dry thoroughly.

- B. Level uneven surfaces and patch cracks and small holes with patching compound compatible with existing materials.

3.03 INSTALLATION

- A. Install tile carpeting in accordance with CRI 104, Section 14 and with tile carpeting manufacturer's written installation instructions.
- B. Cut and fit tile carpeting neatly around projections through floor and to walls and other vertical surfaces. Bind or seal cut edges as recommended by the tile carpeting manufacturer.
- C. Install edge strips where tile carpeting terminates at other floor coverings or finishes. Use one full length piece where possible. Where splicing cannot be avoided, butt ends tight and flush.
- D. Install vinyl base in accordance with manufacturer's instructions. Install base on walls, partitions, columns, and permanent fixtures unless otherwise indicated. Install base in as long lengths as practicable, with preformed external corner units. Miter internal corners. Scribe and fit base to door frames and other interruptions.

3.04 CLEANING AND PROTECTION

- A. Upon completion of the tile carpeting installation, immediately remove spots and smears of excessive adhesive from tile carpeting with cleaning solvent. Remove loose pieces of face yard with sharp scissors.
- B. Place usable remnants of tile carpeting in an area designated by the Director's Representative.
- C. Remove waste materials and tools.
- D. Upon completion, thoroughly vacuum clean carpeted areas.
- E. After each area of tile carpeting has been installed, protect from soiling and damage.
- F. Allow glue-down installation a minimum of 48 hours to cure before subjecting it to any traffic, moving of furniture, or other heavy equipment.

END OF SECTION 096813

SECTION 099130 - PAINTING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Furnish all labor, materials, equipment, and appliances necessary or required to perform and complete all work including, but not limited to, the following:
 - 1. Paint and finish the exterior and interior exposed surfaces listed where shown on the Drawing, as specified herein, and as needed for a complete and proper installation.
- B. Work not included:
 - 1. Unless otherwise indicated, painting is not required on surfaces in concealed areas and inaccessible areas such as furred spaces, foundation spaces, utility tunnels, pipe spaces, and duct shafts.
 - 2. Do not paint over required labels or equipment identification, performance rating, name, or nomenclature plates.
- C. Definitions:
 - 1. "Paint", as used herein, means coating systems materials including primers, emulsions, epoxy, enamels, sealers, fillers, and other applied materials whether used as prime, intermediate, or finish coats.
- D. Obtain color selections from owner at least three (3) weeks prior to beginning painting.

1.2 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Paint coordination:
 - 1. Provide finish coats which are compatible with the prime coats actually used.
 - 2. Review other Sections of these Specifications as required, verifying the prime coats to be used and assuring compatibility of the total coating system for the various substrata.
 - 3. Upon request, furnish information on the characteristics of the specific finish materials to assure that compatible prime coats are used.
 - 4. Provide barrier coats over non-compatible primers, or remove the primer and reprime as required.
 - 5. Notify the Owner in writing of anticipated problems in using the specified coating systems over prime coatings supplied under other Sections.

1.3 SUBMITTALS

- A. Product data:
 - 1. Materials list of items proposed to be provided under this Section.

2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
3. Provide three samples of each color and each gloss for each material on which the finish is specified to be applied.

1.4 JOB CONDITIONS

- A. Do not apply solvent-thinned paints when the temperature of surfaces to be painted and the surrounding air temperatures are below 45°F, unless otherwise permitted by the manufacturer's printed instructions as approved by the Owner.
- B. Weather conditions:
 1. Applications may be continued during inclement weather only within the temperature limits specified by the paint manufacturer as being suitable for use during application and drying periods.

1.5 EXTRA STOCK

- A. Deliver to Owner for his use in future modifications, and extra stock of paint material, packaging each type of material separately, distinctly marked, and in adequately sealed containers.
- B. Contractor shall provide one (1) gallon of extra stock for each type material used at close out of project.

PART 2 - PRODUCTS

2.1 PAINT MATERIALS

- A. Acceptable materials:
 1. Provide first line painting products for all required painting as manufactured by Sherwin Williams, or approved equal. Comply with minimum number of coats as stipulated.
 2. For materials used for succeeding coats, use products of same manufacturer furnishing the first or primer sealer coats for that particular surface.
 3. For all painting work of this Section, color of paint to be as selected by the Architect. Obtain approval of all colors and materials before materials are ordered.
- B. Undercoats and thinners:
 1. Provide undercoat paint by the same manufacturer as the finish coat.
 2. Use only thinners recommended by the paint manufacturer, and use only to the recommended limits.
 3. Insofar as practicable, use undercoat, finish coat, and thinner material as parts of a unified system of paint finish.
- C. All painting products shall meet Federal E.P.A. Standards:
 1. Submit for approval, documentation that all painting products to be used are V.O.C. (Volatile Organic Compound) compliant with New York Air Pollution Control Regulation Part 205.

2. Submit for approval a notarized affidavit from the painting manufacturer stating that all products supplied for this project are V.O.C. compliant.
3. Submit for approval a notarized affidavit from the painting contractor stating that all painting products to be applied on this project are V.O. C. compliant.

2.2 APPLICATION EQUIPMENT

- A. For application of the approved paint, use only such equipment as is recommended for application of the particular paint by the manufacturer of the particular paint, and as approved by the Owner.
- B. Prior to use of applicable equipment, verify that the proposed equipment is actually compatible with the material to be applied, and that integrity of the finish will not be jeopardized by use of the proposed equipment.

2.3 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Owner.

2.4 SCHEDULE OF FINISHES

- A. Interior Ceilings:
 1. Primer: One (1) coat, Sherwin Williams ProMar 200 Zero VOC Primer
 2. Finish: Two (2) coats, Sherwin Williams ProMar 200 Zero VOC Interior Latex, Flat.
- B. Interior Gypsum Walls:
 1. Primer: One (1) coat, ProMar 200 Zero VOC Primer
 2. Finish: Two (2) coats, ProMar 200 Zero VOC Interior Latex, Eggshell.
- C. Metal Door Frames:
 1. Primer: One (1) coat, Sherwin Williams Multipurpose Interior/Ext Latex Primer/Sealer.
Finish: Two (2) coats, Sherwin Williams ProClassic Acrylic Enamel, sheen as selected by owner.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 MATERIAL PREPARATION

- A. General:

1. Mix and prepare paint materials in strict accordance with the manufacturer's recommendations as approved by the Owner.
2. When materials are not in use, store in tightly covered containers.
3. Maintain containers used in storage, mixing, and application of paint in a clean condition, free from foreign materials and residue.

B. Stirring:

1. Stir materials before application, producing a mixture of uniform density.
2. Do not stir into the material any film which may form on the surface, but remove the film and, if necessary, strain the material before using.

3.3 SURFACE PREPARATION

A. General:

1. Perform preparation and cleaning procedures in strict accordance with the paint manufacturer's recommendations as approved by the Owner.
2. Remove removable items which are in place and are not scheduled to receive paint finish; or provide surface applied protection prior to surface preparation and painting operations.
3. Following completion of painting in each space or are, reinstall the removed items by using workmen who are skilled in the necessary trades.
4. Clean each surface to be painted prior to applying paint or surface treatment.
5. Remove oil and grease with clean cloths and cleaning solvent of low toxicity and flash point in excess of 200° F, prior to start of mechanical cleaning.
6. Schedule the cleaning and painting so that dust and other contaminants from the cleaning process will not fall into wet newly painted surfaces.

B. Preparation of metal surfaces:

1. Thoroughly clean surfaces until free from dirt, oil, and grease.
2. On galvanized surfaces, use solvent for the initial cleaning, and then treat the surface thoroughly with phosphoric acid etch. Remove etching solution completely before proceeding.
3. Allow to dry thoroughly before application of paint.

3.4 PAINT APPLICATION

A. General:

1. Touchup shop-applied prime coats which have been damaged, and touchup bare areas prior to start of finish coats application.
2. Slightly vary the color of succeeding coats.
 - a. Do not apply additional coats until the completed coat has been inspected and approved.
 - b. Only the inspected and approved coats of paint will be considered in determining the number of coats applied.
3. Sand and dust between coats to remove defects visible to the unaided eye from a distance of five feet.

B. Drying:

1. Allow sufficient drying time between coats, modifying the period as recommended by the material manufacturer to suit adverse weather conditions.

2. Consider oil-base and oleo-resinous solvent-type paint as dry for recoating when the paint feels firm, does not deform or feel sticky under moderate pressure of the thumb, and when the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- C. Brush applications:
1. Brush out and work the brush coats onto the surface in an even film.
 2. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, and other surface imperfections will not be acceptable.
- D. For completed work, match the approved samples as to texture, color, and coverage. Remove, refinish, or repaint work not in compliance with the specified requirements.
- E. Miscellaneous surfaces and procedures:
1. Exposed mechanical items:
 - a. Finish electric panels, access doors, conduits, pipes, ducts, grilles, registers, vents, and items of similar nature to match the adjacent wall and ceiling surfaces, or as directed.
 - b. Paint visible duct surfaces behind vents, registers, and grilles flat black.
 - c. Wash metal with solvent, prime, and apply two (2) coats of alkyd enamel.
 2. Hardware: Paint prime coated hardware to match adjacent surfaces.
 3. Wet areas:
 - a. In toilet rooms, shower rooms and contiguous areas, add an approved fungicide to paints.
 - b. For oil based paints, use 1% phenylmercuric or 4% tetrachlorophenol.
 - c. For water emulsion and glue size surfaces, use 4% sodium tetra-chlorophenate.

END OF SECTION 099130

SECTION 230513 - COMMON MOTOR REQUIREMENTS FOR HVAC EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general requirements for single-phase and polyphase, general-purpose, horizontal, small and medium, squirrel-cage induction motors for use on ac power systems up to 600 V and installed at equipment manufacturer's factory or shipped separately by equipment manufacturer for field installation.

1.2 COORDINATION

- A. Coordinate features of motors, installed units, and accessory devices to be compatible with the following:
 - 1. Motor controllers.
 - 2. Torque, speed, and horsepower requirements of the load.
 - 3. Ratings and characteristics of supply circuit and required control sequence.
 - 4. Ambient and environmental conditions of installation location.

PART 2 - PRODUCTS

2.1 GENERAL MOTOR REQUIREMENTS

- A. Comply with NEMA MG 1 unless otherwise indicated.

2.2 MOTOR CHARACTERISTICS

- A. Duty: Continuous duty at ambient temperature of 40 deg C and at altitude of 3300 feet (1000 m) above sea level.
- B. Capacity and Torque Characteristics: Sufficient to start, accelerate, and operate connected loads at designated speeds, at installed altitude and environment, with indicated operating sequence, and without exceeding nameplate ratings or considering service factor.

2.3 SINGLE-PHASE MOTORS

- A. Motors larger than 1/20 hp shall be one of the following, to suit starting torque and requirements of specific motor application:
 - 1. Permanent-split capacitor.
 - 2. Split phase.
 - 3. Capacitor start, inductor run.

- 4. Capacitor start, capacitor run.
- B. Multispeed Motors: Variable-torque, permanent-split-capacitor type.
- C. Bearings: Prelubricated, antifriction ball bearings or sleeve bearings suitable for radial and thrust loading.
- D. Motors 1/20 HP and Smaller: Shaded-pole type.
- E. Thermal Protection: Internal protection to automatically open power supply circuit to motor when winding temperature exceeds a safe value calibrated to temperature rating of motor insulation. Thermal-protection device shall automatically reset when motor temperature returns to normal range.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 230513

SECTION 230517 - SLEEVES AND SLEEVE SEALS FOR HVAC PIPING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Sleeves.
 - 2. Sleeve-seal systems.
 - 3. Grout.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

PART 2 - PRODUCTS

2.1 SLEEVES

- A. Cast-Iron Wall Pipes: Cast or fabricated of cast or ductile iron and equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop unless otherwise indicated.
- B. Galvanized-Steel Wall Pipes: ASTM A 53/A 53M, Schedule 40, with plain ends and welded steel collar; zinc coated.
- C. Galvanized-Steel-Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, zinc coated, with plain ends.
- D. PVC-Pipe Sleeves: ASTM D 1785, Schedule 40.
- E. Galvanized-Steel-Sheet Sleeves: 0.0239-inch (0.6-mm) minimum thickness; round tube closed with welded longitudinal joint.

2.2 GROUT

- A. Standard: ASTM C 1107/C 1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
- B. Characteristics: Nonshrink; recommended for interior and exterior applications.
- C. Design Mix: 5000-psi (34.5-MPa), 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

PART 3 - EXECUTION

3.1 SLEEVE INSTALLATION

- A. Install sleeves for piping passing through penetrations in floors, partitions, roofs, and walls.
- B. For sleeves that will have sleeve-seal system installed, select sleeves of size large enough to provide **1-inch (25-mm)** annular clear space between piping and concrete slabs and walls.
 - 1. Sleeves are not required for core-drilled holes.
- C. Install sleeves in concrete floors, concrete roof slabs, and concrete walls as new slabs and walls are constructed.
 - 1. Cut sleeves to length for mounting flush with both surfaces.
 - 2. Using grout, seal the space outside of sleeves in slabs and walls without sleeve-seal system.
- D. Install sleeves for pipes passing through interior partitions.
 - 1. Cut sleeves to length for mounting flush with both surfaces.
 - 2. Install sleeves that are large enough to provide **1/4-inch (6.4-mm)** annular clear space between sleeve and pipe or pipe insulation.
 - 3. Seal annular space between sleeve and piping or piping insulation; use joint sealants appropriate for size, depth, and location of joint. Comply with requirements for sealants specified in Section 079200 "Joint Sealants."
- E. Fire-Barrier Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with firestop materials.

END OF SECTION 230517

SECTION 230529 - HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Metal pipe hangers and supports.
 - 2. Fastener systems.
 - 3. Equipment supports.

1.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design trapeze pipe hangers and equipment supports, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Structural Performance: Hangers and supports for HVAC piping and equipment shall withstand the effects of gravity loads and stresses within limits and under conditions indicated according to ASCE/SEI 7.
 - 1. Design supports for multiple pipes capable of supporting combined weight of supported systems, system contents, and test water.
 - 2. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show fabrication and installation details and include calculations for the following; include Product Data for components:
 - 1. Equipment supports.

1.4 INFORMATIONAL SUBMITTALS

- A. Welding certificates.

1.5 QUALITY ASSURANCE

- A. Structural Steel Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

- B. Pipe Welding Qualifications: Qualify procedures and operators according to ASME Boiler and Pressure Vessel Code.

PART 2 - PRODUCTS

2.1 METAL PIPE HANGERS AND SUPPORTS

A. Carbon-Steel Pipe Hangers and Supports:

1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
2. Galvanized Metallic Coatings: Pregalvanized or hot dipped.
3. Nonmetallic Coatings: Plastic coating, jacket, or liner.
4. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
5. Hanger Rods: Continuous-thread rod, nuts, and washer made of **carbon steel**.

B. Stainless-Steel Pipe Hangers and Supports:

1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
2. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
3. Hanger Rods: Continuous-thread rod, nuts, and washer made of **stainless steel**.

C. Copper Pipe Hangers:

1. Description: MSS SP-58, Types 1 through 58, copper-coated-steel, factory-fabricated components.
2. Hanger Rods: Continuous-thread rod, nuts, and washer made of **copper-coated steel**.

2.2 FASTENER SYSTEMS

- A. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.
- B. Mechanical-Expansion Anchors: Insert-wedge-type, **zinc-coated stainless-** steel anchors, for use in hardened portland cement concrete; with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

2.3 EQUIPMENT SUPPORTS

- A. Description: Welded, shop- or field-fabricated equipment support made from structural carbon-steel shapes.

2.4 MISCELLANEOUS MATERIALS

- A. Structural Steel: ASTM A 36/A 36M, carbon-steel plates, shapes, and bars; black and galvanized.
- B. Grout: ASTM C 1107, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.
 - 1. Properties: Nonstaining, noncorrosive, and nongaseous.
 - 2. Design Mix: 5000-psi (34.5-MPa), 28-day compressive strength.

PART 3 - EXECUTION

3.1 HANGER AND SUPPORT INSTALLATION

- A. Metal Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Install hangers, supports, clamps, and attachments as required to properly support piping from the building structure.
- B. Install hangers and supports complete with necessary attachments, inserts, bolts, rods, nuts, washers, and other accessories.
- C. Equipment Support Installation: Fabricate from welded-structural-steel shapes.
- D. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.
- E. Install lateral bracing with pipe hangers and supports to prevent swaying.
- F. Load Distribution: Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
- G. Insulated Piping:
 - 1. Attach clamps and spacers to piping.
 - a. Piping Operating above Ambient Air Temperature: Clamp may project through insulation.
 - b. Piping Operating below Ambient Air Temperature: Use thermal-hanger shield insert with clamp sized to match OD of insert.
 - c. Do not exceed pipe stress limits allowed by ASME B31.9 for building services piping.

3.2 EQUIPMENT SUPPORTS

- A. Fabricate structural-steel stands to suspend equipment from structure overhead or to support equipment above floor.

- B. Grouting: Place grout under supports for equipment and make bearing surface smooth.
- C. Provide lateral bracing, to prevent swaying, for equipment supports.

3.3 ADJUSTING

- A. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.

3.4 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
 - 1. Apply paint by brush or spray to provide a minimum dry film thickness of 2.0 mils (0.05 mm).
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

3.5 HANGER AND SUPPORT SCHEDULE

- A. Specific hanger and support requirements are in Sections specifying piping systems and equipment.
- B. Comply with MSS SP-69 for pipe-hanger selections and applications that are not specified in piping system Sections.
- C. Use hangers and supports with galvanized metallic coatings for piping and equipment that will not have field-applied finish.
- D. Use nonmetallic coatings on attachments for electrolytic protection where attachments are in direct contact with copper tubing.

END OF SECTION 230529

SECTION 230548.13 - VIBRATION CONTROLS FOR HVAC

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:w
1. Open-spring isolators.
 2. Housed-spring isolators.
 3. Pipe-riser resilient supports.
 4. Resilient pipe guides.
 5. Spring hangers.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Delegated-Design Submittal: For each vibration isolation device.
1. Include design calculations for selecting vibration isolators.

PART 2 - PRODUCTS

2.1 OPEN-SPRING ISOLATORS

- A. Freestanding, Laterally Stable, Open-Spring Isolators:
1. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
 2. Minimum Additional Travel: 50 percent of the required deflection at rated load.
 3. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 4. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
 5. Baseplates: Factory-drilled steel plate for bolting to structure with an elastomeric isolator pad attached to the underside. Baseplates shall limit floor load to 500 psig (3447 kPa).
 6. Top Plate and Adjustment Bolt: Threaded top plate with adjustment bolt and cap screw to fasten and level equipment.

2.2 HOUSED-SPRING ISOLATORS

- A. Freestanding, Laterally Stable, Open-Spring Isolators in Two-Part Telescoping Housing:
1. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
 2. Minimum Additional Travel: 50 percent of the required deflection at rated load.

3. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
4. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
5. Two-Part Telescoping Housing: A steel top and bottom frame separated by an elastomeric material and enclosing the spring isolators.
 - a. Drilled base housing for bolting to structure with an elastomeric isolator pad attached to the underside. Bases shall limit floor load to **500 psig (3447 kPa)**.
 - b. Top housing with **attachment and leveling bolt threaded mounting holes and internal leveling device elastomeric pad**.

2.3 RESTRAINED-SPRING ISOLATORS

2.4 PIPE-RISER RESILIENT SUPPORT

- A. Description: All-directional, acoustical pipe anchor consisting of two steel tubes separated by a minimum **1/2-inch- (13-mm-)** thick neoprene.
 1. Vertical-Limit Stops: Steel and neoprene vertical-limit stops arranged to prevent vertical travel in both directions.
 2. Maximum Load Per Support: **500 psig (3.45 MPa)** on isolation material providing equal isolation in all directions.

2.5 RESILIENT PIPE GUIDES

- A. Description: Telescopic arrangement of two steel tubes or post and sleeve arrangement separated by a minimum **1/2-inch- (13-mm-)** thick neoprene.
 1. Factory-Set Height Guide with Shear Pin: Shear pin shall be removable and reinsertable to allow for selection of pipe movement. Guides shall be capable of motion to meet location requirements.

2.6 SPRING HANGERS

- A. Combination Coil-Spring and Elastomeric-Insert Hanger with Spring and Insert in Compression:
 1. Frame: Steel, fabricated for connection to threaded hanger rods and to allow for a maximum of 30 degrees of angular hanger-rod misalignment without binding or reducing isolation efficiency.
 2. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
 3. Minimum Additional Travel: 50 percent of the required deflection at rated load.
 4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.

6. Elastomeric Element: Molded, oil-resistant rubber or neoprene. Steel-washer-reinforced cup to support spring and bushing projecting through bottom of frame.
7. Adjustable Vertical Stop: Steel washer with neoprene washer "up-stop" on lower threaded rod.
8. Self-centering hanger rod cap to ensure concentricity between hanger rod and support spring coil.

PART 3 - EXECUTION

3.1 VIBRATION CONTROL DEVICE INSTALLATION

- A. Installation of vibration isolators must not cause any change of position of equipment, piping, or ductwork resulting in stresses or misalignment.

END OF SECTION 230548.13

SECTION 230553 - IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Equipment labels.
 2. Warning signs and labels.
 3. Pipe labels.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 EQUIPMENT LABELS

- A. Metal Labels for Equipment:
1. Material and Thickness: **stainless steel, 0.025-inch (0.64-mm)** minimum thickness, and having predrilled or stamped holes for attachment hardware.
 2. Letter Color: **Black**.
 3. Background Color: **White**.
 4. Minimum Label Size: Length and width vary for required label content, but not less than **2-1/2 by 3/4 inch (64 by 19 mm)**.
 5. Minimum Letter Size: **1/4 inch (6.4 mm)** for name of units if viewing distance is less than **24 inches (600 mm)**, **1/2 inch (13 mm)** for viewing distances up to **72 inches (1830 mm)**, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.
 6. Fasteners: Stainless-steel **rivets or self-tapping screws**.
 7. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.

2.2 WARNING SIGNS AND LABELS

- A. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, **1/8 inch (3.2 mm)** thick, and having predrilled holes for attachment hardware.
- B. Letter Color: **Black**
- C. Background Color: **White**
- D. Maximum Temperature: Able to withstand temperatures up to **160 deg F (71 deg C)**.

- E. Minimum Label Size: Length and width vary for required label content, but not less than **2-1/2 by 3/4 inch (64 by 19 mm)**.
- F. Minimum Letter Size: **1/4 inch (6.4 mm)** for name of units if viewing distance is less than **24 inches (600 mm)**, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.
- G. Fasteners: Stainless-steel
- H. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.
- I. Label Content: Include caution and warning information plus emergency notification instructions.

2.3 PIPE LABELS

- A. General Requirements for Manufactured Pipe Labels: Preprinted, color-coded, with lettering indicating service, and showing flow direction according to ASME A13.1.
- B. Pretensioned Pipe Labels: Precoiled, semirigid plastic formed to **partially cover** circumference of pipe and to attach to pipe without fasteners or adhesive.
- C. Self-Adhesive Pipe Labels: Printed plastic with contact-type, permanent-adhesive backing.
- D. Pipe Label Contents: Include identification of piping service using same designations or abbreviations as used on Drawings; also include pipe size and an arrow indicating flow direction.
 - 1. Flow-Direction Arrows: Integral with piping system service lettering to accommodate both directions or as separate unit on each pipe label to indicate flow direction.
 - 2. Lettering Size: **Size letters according to ASME A13.1 for piping At least 1/2 inch (13 mm) for viewing distances up to 72 inches (1830 mm) and proportionately larger lettering for greater viewing distances.**

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean piping and equipment surfaces of substances that could impair bond of identification devices, including dirt, oil, grease, release agents, and incompatible primers, paints, and encapsulants.

3.2 EQUIPMENT LABEL INSTALLATION

- A. Install or permanently fasten labels on each major item of mechanical equipment.
- B. Locate equipment labels where accessible and visible.

3.3 PIPE LABEL INSTALLATION

- A. Piping Color-Coding: Painting of piping is specified in **Section 099123 "Interior Painting."**
- B. Pipe Label Locations: Locate pipe labels where piping is exposed or above accessible ceilings in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior exposed locations as follows:
 - 1. Near each valve and control device.
 - 2. Near each branch connection, excluding short takeoffs for fixtures and terminal units. Where flow pattern is not obvious, mark each pipe at branch.
 - 3. Near penetrations and on both sides of through walls, floors, ceilings, and inaccessible enclosures.
 - 4. At access doors, manholes, and similar access points that permit view of concealed piping.
 - 5. Near major equipment items and other points of origination and termination.
 - 6. Spaced at maximum intervals of **50 feet (15 m)** along each run. Reduce intervals to **25 feet (7.6 m)** in areas of congested piping and equipment.
 - 7. On piping above removable acoustical ceilings. Omit intermediately spaced labels.

END OF SECTION 230553

SECTION 230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Balancing Air Systems:
 - a. Constant-volume air systems.

1.2 DEFINITIONS

- A. AABC: Associated Air Balance Council.
- B. NEBB: National Environmental Balancing Bureau.
- C. TAB: Testing, adjusting, and balancing.
- D. TABB: Testing, Adjusting, and Balancing Bureau.
- E. TAB Specialist: An entity engaged to perform TAB Work.

1.3 ACTION SUBMITTALS

- A. LEED Submittals:
 - 1. Air-Balance Report for Prerequisite IEQ 1: Documentation of work performed for ASHRAE 62.1, Section 7.2.2 - "Air Balancing."
 - 2. TAB Report for Prerequisite EA 2: Documentation of work performed for ASHRAE/IESNA 90.1, Section 6.7.2.3 - "System Balancing."

1.4 INFORMATIONAL SUBMITTALS

- A. Certified TAB reports.

1.5 QUALITY ASSURANCE

- A. TAB Contractor Qualifications: Engage a TAB entity certified by **NEBB**.
 - 1. TAB Field Supervisor: Employee of the TAB contractor and certified by **NEBB**.
 - 2. TAB Technician: Employee of the TAB contractor and who is certified by **NEBB** as a TAB technician.

- B. Certify TAB field data reports and perform the following:
 - 1. Review field data reports to validate accuracy of data and to prepare certified TAB reports.
 - 2. Certify that the TAB team complied with the approved TAB plan and the procedures specified and referenced in this Specification.
- C. TAB Report Forms: Use standard TAB contractor's forms approved by **Architect**.
- D. Instrumentation Type, Quantity, Accuracy, and Calibration: As described in ASHRAE 111, Section 5, "Instrumentation."
- E. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 7.2.2 - "Air Balancing."
- F. ASHRAE/IESNA Compliance: Applicable requirements in ASHRAE/IESNA 90.1, Section 6.7.2.3 - "System Balancing."

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine the Contract Documents to become familiar with Project requirements and to discover conditions in systems' designs that may preclude proper TAB of systems and equipment.
- B. Examine the approved submittals for HVAC systems and equipment.
- C. Examine equipment performance data including fan and pump curves.
 - 1. Relate performance data to Project conditions and requirements, including system effects that can create undesired or unpredicted conditions that cause reduced capacities in all or part of a system.
- D. Examine system and equipment installations and verify that field quality-control testing, cleaning, and adjusting specified in individual Sections have been performed.
- E. Examine test reports specified in individual system and equipment Sections.

3.2 PREPARATION

- A. Prepare a TAB plan that includes strategies and step-by-step procedures.
- B. Complete system-readiness checks and prepare reports. Verify the following:
 - 1. Permanent electrical-power wiring is complete.

2. Ceilings are installed in critical areas where air-pattern adjustments are required and access to balancing devices is provided.
3. Windows and doors can be closed so indicated conditions for system operations can be met.

3.3 GENERAL PROCEDURES FOR BALANCING AIR SYSTEMS

- A. Prepare test reports for both fans and outlets. Obtain manufacturer's outlet factors and recommended testing procedures. Crosscheck the summation of required outlet volumes with required fan volumes.
- B. Locate start-stop and disconnect switches, electrical interlocks, and motor starters.
- C. Verify that motor starters are equipped with properly sized thermal protection.
- D. Check condensate drains for proper connections and functioning.
- E. Check for proper sealing of air-handling-unit components.

3.4 PROCEDURES FOR MOTORS

- A. Motors, 1/2 HP and Larger: Test at final balanced conditions and record the following data:
 1. Manufacturer's name, model number, and serial number.
 2. Motor horsepower rating.
 3. Motor rpm.
 4. Efficiency rating.
 5. Nameplate and measured voltage, each phase.
 6. Nameplate and measured amperage, each phase.
 7. Starter thermal-protection-element rating.

3.5 PROCEDURES FOR CONDENSING UNITS

- A. Verify proper rotation of fans.
- B. Measure entering- and leaving-air temperatures.
- C. Record compressor data.

3.6 FINAL REPORT

- A. General: Prepare a certified written report; tabulate and divide the report into separate sections for tested systems and balanced systems.
 1. Include a certification sheet at the front of the report's binder, signed and sealed by the certified testing and balancing engineer.
 2. Include a list of instruments used for procedures, along with proof of calibration.

- B. General Report Data: In addition to form titles and entries, include the following data:
1. Title page.
 2. Name and address of the TAB contractor.
 3. Project name.
 4. Project location.
 5. Architect's name and address.
 6. Engineer's name and address.
 7. Contractor's name and address.
 8. Report date.
 9. Signature of TAB supervisor who certifies the report.
 10. Table of Contents with the total number of pages defined for each section of the report. Number each page in the report.
 11. Summary of contents including the following:
 - a. Indicated versus final performance.
 - b. Notable characteristics of systems.
 - c. Description of system operation sequence if it varies from the Contract Documents.
 12. Nomenclature sheets for each item of equipment.
 13. Data for terminal units, including manufacturer's name, type, size, and fittings.
 14. Notes to explain why certain final data in the body of reports vary from indicated values.

END OF SECTION 230593

SECTION 230719 - HVAC PIPING INSULATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes insulating the following HVAC piping systems:
 - 1. Refrigerant suction and hot-gas piping, **indoors and outdoors**.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. LEED Submittals:
 - 1. Product Data for Credit IEQ 4.1: For adhesives and sealants, documentation including printed statement of VOC content.
 - 2. Laboratory Test Reports for Credit IEQ 4: For adhesives and sealants, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- C. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail application of protective shields, saddles, and inserts at hangers for each type of insulation and hanger.

1.3 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.4 QUALITY ASSURANCE

- A. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84, by a testing and inspecting agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.
 - 1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.
 - 2. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

- A. Products shall not contain asbestos, lead, mercury, or mercury compounds.
- B. Products that come in contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested according to ASTM C 871.
- C. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C 795.
- D. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.
- E. Cellular Glass: Inorganic, incombustible, foamed or cellulated glass with annealed, rigid, hermetically sealed cells. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.
- F. Flexible Elastomeric Insulation: Closed-cell, sponge- or expanded-rubber materials. Comply with ASTM C 534, Type I for tubular materials.

2.2 ADHESIVES

- A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated unless otherwise indicated.
- B. Flexible Elastomeric and Polyolefin Adhesive: Comply with MIL-A-24179A, Type II, Class I.
 - 1. For indoor applications, adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2. Adhesive shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- C. PVC Jacket Adhesive: Compatible with PVC jacket.
 - 1. For indoor applications, adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2. Adhesive shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.3 MASTICS

- A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-PRF-19565C, Type II.

1. For indoor applications, use mastics that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.4 SECUREMENTS

- A. Aluminum Bands: **ASTM B 209 (ASTM B 209M)**, Alloy 3003, 3005, 3105, or 5005; Temper H-14, **0.020 inch (0.51 mm)** thick, **1/2 inch (13 mm) 3/4 inch (19 mm)** wide with **closed seal**.
- B. Staples: Outward-clinching insulation staples, nominal **3/4-inch- (19-mm-)** wide, stainless steel or Monel.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.
- B. Coordinate insulation installation with the trade installing heat tracing. Comply with requirements for heat tracing that apply to insulation.
- C. Mix insulating cements with clean potable water; if insulating cements are to be in contact with stainless-steel surfaces, use demineralized water.

3.2 GENERAL INSTALLATION REQUIREMENTS

- A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping including fittings, valves, and specialties.
- B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of pipe system as specified in insulation system schedules.
- C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.
- D. Install insulation with longitudinal seams at top and bottom of horizontal runs.
- E. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.
- F. Keep insulation materials dry during application and finishing.
- G. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.
- H. Install insulation with least number of joints practical.

- I. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.
- J. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.
- K. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.
- L. For above-ambient services, do not install insulation to the following:
 - 1. Vibration-control devices.
 - 2. Testing agency labels and stamps.
 - 3. Nameplates and data plates.
 - 4. Manholes.
 - 5. Handholes.
 - 6. Cleanouts.

3.3 PENETRATIONS

- A. Insulation Installation at Aboveground Exterior Wall Penetrations: Install insulation continuously through wall penetrations.
 - 1. Seal penetrations with flashing sealant.
 - 2. For applications requiring only indoor insulation, terminate insulation inside wall surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
 - 3. Extend jacket of outdoor insulation outside wall flashing and overlap wall flashing at least **2 inches (50 mm)**.
 - 4. Seal jacket to wall flashing with flashing sealant.
- B. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.
- C. Insulation Installation at Fire-Rated Wall and Partition Penetrations: Install insulation continuously through penetrations of fire-rated walls and partitions.
 - 1. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping and fire-resistive joint sealers.
- D. Insulation Installation at Floor Penetrations:
 - 1. Pipe: Install insulation continuously through floor penetrations.

3.4 GENERAL PIPE INSULATION INSTALLATION

- A. Requirements in this article generally apply to all insulation materials except where more specific requirements are specified in various pipe insulation material installation articles.

3.5 INSTALLATION OF FLEXIBLE ELASTOMERIC INSULATION

- A. Seal longitudinal seams and end joints with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
- B. Insulation Installation on Pipe Flanges:
 - 1. Install pipe insulation to outer diameter of pipe flange.
 - 2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
 - 3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with cut sections of sheet insulation of same thickness as pipe insulation.
 - 4. Secure insulation to flanges and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
- C. Insulation Installation on Pipe Fittings and Elbows:
 - 1. Install mitered sections of pipe insulation.
 - 2. Secure insulation materials and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
- D. Insulation Installation on Valves and Pipe Specialties:
 - 1. Install preformed valve covers manufactured of same material as pipe insulation when available.
 - 2. When preformed valve covers are not available, install cut sections of pipe and sheet insulation to valve body. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
 - 3. Install insulation to flanges as specified for flange insulation application.
 - 4. Secure insulation to valves and specialties and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

3.6 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. All insulation applications will be considered defective Work if sample inspection reveals noncompliance with requirements.

3.7 PIPING INSULATION SCHEDULE, GENERAL

- A. Acceptable preformed pipe and tubular insulation materials and thicknesses are identified for each piping system and pipe size range. If more than one material is listed for a piping system, selection from materials listed is Contractor's option.

3.8 INDOOR PIPING INSULATION SCHEDULE

- A. Refrigerant Suction and Hot-Gas Piping: **Flexible elastomeric pipe insulation, 1 inch (25 mm)** thick.
- B. Refrigerant Suction and Hot-Gas Flexible Tubing: **Flexible elastomeric, 1 inch (25 mm)** thick.

3.9 OUTDOOR, ABOVEGROUND PIPING INSULATION SCHEDULE

- A. Refrigerant Suction and Hot-Gas Piping: Insulation shall be:
 - 1. Flexible Elastomeric: **2 inches (50 mm)** thick.
- B. Refrigerant Suction and Hot-Gas Flexible Tubing: Insulation shall be the following:
 - 1. Flexible Elastomeric: **2 inches (50 mm)** thick.

END OF SECTION 230719

SECTION 230923.33 - VIBRATION INSTRUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes mechanical vibration switches connected to direct digital control systems for HVAC.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings:
 - 1. Include plans, elevations, sections, and **mounting** details.
 - 2. Include details of product assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 3. Include diagrams for power, signal, and control wiring.
 - 4. Include number-coded identification system for unique identification of wiring and cable.

1.3 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

PART 2 - PRODUCTS

2.1 MECHANICAL VIBRATION SWITCHES

- A. Description: Inertia-sensitive armature mechanism trips on high vibration and operates snap action switch.
- B. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for hazardous environments Class I, Groups B, C, and D; Class II, Groups E, F, and G.
- C. Operator Interface:
 - 1. Vibration Set-Point Adjustment: Zero to 100 percent of range.
 - 2. Push-button reset on switch face and reset coil for remote reset.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install products level, plumb, parallel, and perpendicular with building construction.
- B. Use manufacturer's mounting brackets to accommodate field mounting. Securely support and brace products to prevent vibration and movement.
- C. Fastening Hardware:
 - 1. Lubricate threads of bolts, nuts, and screws with graphite and oil before assembly.
- D. Install products in locations that are accessible and that permit calibration and maintenance from floor, equipment platforms, or catwalks. Where ladders are required for Owner's access, confirm unrestricted ladder placement is possible under occupied condition.
- E. Corrosive Environments:
 - 1. Use products that are suitable for environment to which they are subjected.
 - 2. If possible, avoid or limit use of materials in corrosive environments.
 - 3. When conduit is in contact with a corrosive environment, use Type 316 stainless-steel conduit and fittings or conduit and fittings that are coated with a corrosive-resistant coating that is suitable for environment.
 - 4. Where instruments are located in a corrosive environment and are not corrosive resistant from manufacturer, field install products in a NEMA 250, Type 4X enclosure constructed of Type 316L stainless steel.

3.2 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Each piece of wire shall have the same designation at each end for operators to determine continuity at points of connection. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- B. Install engraved phenolic nameplate with instrument identification.

END OF SECTION 230923.33

SECTION 232113 - HYDRONIC PIPING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes pipe and fitting materials and joining methods for the following:
 - 1. Condensate-drain piping.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of the following:
 - 1. Plastic pipe and fittings with solvent cement.
 - 2. RTRP and RTRF with adhesive.
 - 3. Pressure-seal fittings.
 - 4. Chemical treatment.
- B. LEED Submittals:
 - 1. Product Data for Credit IEQ 4.1: For solvent cements and adhesive primers, documentation including printed statement of VOC content.
 - 2. Laboratory Test Reports for Credit IEQ 4.1: For solvent cements and adhesive primers, documentation indicating that products comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Health Services) "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- C. Delegated-Design Submittal:
 - 1. Design calculations and detailed fabrication and assembly of pipe anchors and alignment guides, hangers and supports for multiple pipes, expansion joints and loops, and attachments of the same to the building structure.
 - 2. Locations of pipe anchors and alignment guides and expansion joints and loops.
 - 3. Locations of and details for penetrations, including sleeves and sleeve seals for exterior walls, floors, basement, and foundation walls.
 - 4. Locations of and details for penetration and firestopping for fire- and smoke-rated wall and floor and ceiling assemblies.

1.3 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.4 QUALITY ASSURANCE

- A. ASME Compliance: Comply with ASME B31.9, "Building Services Piping," for materials, products, and installation.

PART 2 - PRODUCTS

2.1 PLASTIC PIPE AND FITTINGS

- A. CPVC Plastic Pipe: ASTM F 441/F 441M, with wall thickness as indicated in "Piping Applications" Article.
 - 1. CPVC Plastic Pipe Fittings: Socket-type pipe fittings, ASTM F 438 for Schedule 40 pipe; ASTM F 439 for Schedule 80 pipe.
- B. PVC Plastic Pipe: ASTM D 1785, with wall thickness as indicated in "Piping Applications" Article.
 - 1. PVC Plastic Pipe Fittings: Socket-type pipe fittings, ASTM D 2466 for Schedule 40 pipe; ASTM D 2467 for Schedule 80 pipe.

2.2 JOINING MATERIALS

- A. Solvent Cements for Joining Plastic Piping:
 - 1. CPVC Piping: ASTM F 493.
 - a. CPVC solvent cement shall have a VOC content of 490 g/L or less.
 - b. Adhesive primer shall have a VOC content of 550 g/L or less.
 - c. Solvent cement and adhesive primer shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
 - 2. PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.
 - a. PVC solvent cement shall have a VOC content of 510 g/L or less.
 - b. Adhesive primer shall have a VOC content of 550 g/L or less.
 - c. Solvent cement and adhesive primer shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- B. Gasket Material: Thickness, material, and type suitable for fluid to be handled and working temperatures and pressures.

PART 3 - EXECUTION

3.1 PIPING APPLICATIONS

- A. Condensate-Drain Piping: **Type M (Type C) Type DWV**, drawn-temper copper tubing, wrought-copper fittings, and soldered joints **or Schedule 40 PVC plastic pipe and fittings and solvent-welded joints.**
- B. Condensate-Drain Piping: Schedule 40 PVC plastic pipe and fittings and solvent-welded joints.

3.2 PIPING INSTALLATIONS

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.
- B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
- C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- D. Install piping at indicated slopes.
- E. Install piping free of sags and bends.
- F. Install fittings for changes in direction and branch connections.
- G. Install piping to allow application of insulation.
- H. Select system components with pressure rating equal to or greater than system operating pressure.
- I. Install drains, consisting of a tee fitting, **NPS 3/4 (DN 20)** ball valve, and short **NPS 3/4 (DN 20)** threaded nipple with cap, at low points in piping system mains and elsewhere as required for system drainage.
- J. Install piping at a uniform grade of 0.2 percent upward in direction of flow.
- K. Install sleeves for piping penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 230517 "Sleeves and Sleeve Seals for HVAC Piping."
- L. Install sleeve seals for piping penetrations of concrete walls and slabs. Comply with requirements for sleeve seals specified in Section 230517 "Sleeves and Sleeve Seals for HVAC Piping."
- M. Install escutcheons for piping penetrations of walls, ceilings, and floors. Comply with requirements for escutcheons specified in Section 230518 "Escutcheons for HVAC Piping."

3.3 HANGERS AND SUPPORTS

- A. Comply with requirements in Section 230529 "Hangers and Supports for HVAC Piping and Equipment" for hanger, support, and anchor devices. Comply with the following requirements for maximum spacing of supports.
- B. Comply with requirements in Section 230548 "Vibration and Seismic Controls for HVAC" for seismic restraints.
- C. Plastic Piping Hanger Spacing: Space hangers according to pipe manufacturer's written instructions for service conditions. Avoid point loading. Space and install hangers with the fewest practical rigid anchor points.
- D. Support vertical runs at roof, at each floor, and at **10-foot (3-m)** intervals between floors.

3.4 PIPE JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- C. Plastic Piping Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
 - 1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
 - 2. CPVC Piping: Join according to ASTM D 2846/D 2846M Appendix.
 - 3. PVC Pressure Piping: Join ASTM D 1785 schedule number, PVC pipe and PVC socket fittings according to ASTM D 2672. Join other-than-schedule number PVC pipe and socket fittings according to ASTM D 2855.
 - 4. PVC Nonpressure Piping: Join according to ASTM D 2855.
- D. Grooved Joints: Assemble joints with coupling and gasket, lubricant, and bolts. Cut or roll grooves in ends of pipe based on pipe and coupling manufacturer's written instructions for pipe wall thickness. Use grooved-end fittings and rigid, grooved-end-pipe couplings.
- E. Mechanically Formed, Copper-Tube-Outlet Joints: Use manufacturer-recommended tool and procedure, and brazed joints.

END OF SECTION 232113

SECTION 232300 - REFRIGERANT PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Refrigerant pipes and fittings.
2. Refrigerant piping valves and specialties.
3. Refrigerants.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of valve and refrigerant piping specialty.

B. Shop Drawings:

1. Show piping size and piping layout, including oil traps, double risers, specialties, and pipe and tube sizes to accommodate, as a minimum, equipment provided, elevation difference between compressor and evaporator, and length of piping to ensure proper operation and compliance with warranties of connected equipment.
2. Show interface and spatial relationships between piping and equipment.
3. Shop Drawing Scale: **1/4 inch equals 1 foot.**

1.3 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For refrigerant valves and piping specialties to include in maintenance manuals.

1.5 QUALITY ASSURANCE

- A. Comply with ASHRAE 15, "Safety Code for Refrigeration Systems."
- B. Comply with ASME B31.5, "Refrigeration Piping and Heat Transfer Components."

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Line Test Pressure for Refrigerant R-410A:
 - 1. Suction Lines for Air-Conditioning Applications: 300 psig.
 - 2. Suction Lines for Heat-Pump Applications: 535 psig.
 - 3. Hot-Gas and Liquid Lines: 535 psig.

2.2 COPPER TUBE AND FITTINGS

- A. Copper Tube: **ASTM B 88, Type K or L (ASTM B 88M, Type A or B) ASTM B 280, Type ACR.**
- B. Wrought-Copper Fittings: ASME B16.22.
- C. Wrought-Copper Unions: ASME B16.22.
- D. Solder Filler Metals: ASTM B 32. Use 95-5 tin antimony or alloy HB solder to join copper socket fittings on copper pipe.
- E. Brazing Filler Metals: AWS A5.8/A5.8M.
- F. Flexible Connectors:
 - 1. Body: Tin-bronze bellows with woven, flexible, tinned-bronze-wire-reinforced protective jacket.
 - 2. End Connections: Socket ends.
 - 3. Offset Performance: Capable of minimum 3/4-inch (20-mm) misalignment in minimum 7-inch- (180-mm-) long assembly.
 - 4. Working Pressure Rating: Factory test at minimum 500 psig (3450 kPa).
 - 5. Maximum Operating Temperature: 250 deg F (121 deg C).

2.3 VALVES AND SPECIALTIES

- A. Diaphragm Packless Valves:
 - 1. Body and Bonnet: Forged brass or cast bronze; globe design with straight-through or angle pattern.
 - 2. Diaphragm: Phosphor bronze and stainless steel with stainless-steel spring.
 - 3. Operator: Rising stem and hand wheel.
 - 4. Seat: Nylon.
 - 5. End Connections: Socket, union, or flanged.
 - 6. Working Pressure Rating: 500 psig (3450 kPa).
 - 7. Maximum Operating Temperature: 275 deg F (135 deg C).
- B. Packed-Angle Valves:

1. Body and Bonnet: Forged brass or cast bronze.
 2. Packing: Molded stem, back seating, and replaceable under pressure.
 3. Operator: Rising stem.
 4. Seat: Nonrotating, self-aligning polytetrafluoroethylene.
 5. Seal Cap: Forged-brass or valox hex cap.
 6. End Connections: Socket, union, threaded, or flanged.
 7. Working Pressure Rating: 500 psig (3450 kPa).
 8. Maximum Operating Temperature: 275 deg F (135 deg C).
- C. Check Valves:
1. Body: Ductile iron, forged brass, or cast bronze; globe pattern.
 2. Bonnet: Bolted ductile iron, forged brass, or cast bronze; or brass hex plug.
 3. Piston: Removable polytetrafluoroethylene seat.
 4. Closing Spring: Stainless steel.
 5. Manual Opening Stem: Seal cap, plated-steel stem, and graphite seal.
 6. End Connections: Socket, union, threaded, or flanged.
 7. Maximum Opening Pressure: 0.50 psig (3.4 kPa).
 8. Working Pressure Rating: 500 psig (3450 kPa).
 9. Maximum Operating Temperature: 275 deg F (135 deg C).
- D. Service Valves:
1. Body: Forged brass with brass cap including key end to remove core.
 2. Core: Removable ball-type check valve with stainless-steel spring.
 3. Seat: Polytetrafluoroethylene.
 4. End Connections: Copper spring.
 5. Working Pressure Rating: 500 psig (3450 kPa).
- E. Solenoid Valves: Comply with AHRI 760 and UL 429; listed and labeled by a National Recognized Testing Laboratory (NRTL).
1. Body and Bonnet: Plated steel.
 2. Solenoid Tube, Plunger, Closing Spring, and Seat Orifice: Stainless steel.
 3. Seat: Polytetrafluoroethylene.
 4. End Connections: Threaded.
 5. Electrical: Molded, watertight coil in NEMA 250 enclosure of type required by location with 1/2-inch (16-GRC) conduit adapter, and 24 115 208-V ac coil.
 6. Working Pressure Rating: 400 psig (2760 kPa).
 7. Maximum Operating Temperature: 240 deg F (116 deg C).
- F. Safety Relief Valves: Comply with 2010 ASME Boiler and Pressure Vessel Code; listed and labeled by an NRTL.
1. Body and Bonnet: Ductile iron and steel, with neoprene O-ring seal.
 2. Piston, Closing Spring, and Seat Insert: Stainless steel.
 3. Seat: Polytetrafluoroethylene.
 4. End Connections: Threaded.
 5. Working Pressure Rating: 400 psig (2760 kPa).
 6. Maximum Operating Temperature: 240 deg F (116 deg C).

- G. Thermostatic Expansion Valves: Comply with AHRI 750.
1. Body, Bonnet, and Seal Cap: Forged brass or steel.
 2. Diaphragm, Piston, Closing Spring, and Seat Insert: Stainless steel.
 3. Packing and Gaskets: Non-asbestos.
 4. Capillary and Bulb: Copper tubing filled with refrigerant charge.
 5. Suction Temperature: **40 deg F (4.4 deg C)**.
 6. Superheat: **Adjustable Nonadjustable**.
 7. Reverse-flow option (for heat-pump applications).
 8. End Connections: Socket, flare, or threaded union.
 9. Working Pressure Rating: **700 psig (4820 kPa) 450 psig (3100 kPa)**.
- H. Hot-Gas Bypass Valves: Comply with UL 429; listed and labeled by an NRTL.
1. Body, Bonnet, and Seal Cap: Ductile iron or steel.
 2. Diaphragm, Piston, Closing Spring, and Seat Insert: Stainless steel.
 3. Packing and Gaskets: Non-asbestos.
 4. Solenoid Tube, Plunger, Closing Spring, and Seat Orifice: Stainless steel.
 5. Seat: Polytetrafluoroethylene.
 6. Equalizer: **Internal External**.
 7. Electrical: Molded, watertight coil in NEMA 250 enclosure of type required by location with **1/2-inch (16-GRC)** conduit adapter and **24 115 208-V** ac coil.
 8. End Connections: Socket.
 9. Set Pressure:
 10. Throttling Range: Maximum **5 psig (34 kPa)**.
 11. Working Pressure Rating: **500 psig (3450 kPa)**.
 12. Maximum Operating Temperature: **240 deg F (116 deg C)**.
- I. Straight-Type Strainers:
1. Body: Welded steel with corrosion-resistant coating.
 2. Screen: 100-mesh stainless steel.
 3. End Connections: Socket or flare.
 4. Working Pressure Rating: **500 psig (3450 kPa)**.
 5. Maximum Operating Temperature: **275 deg F (135 deg C)**.
- J. Angle-Type Strainers:
1. Body: Forged brass or cast bronze.
 2. Drain Plug: Brass hex plug.
 3. Screen: 100-mesh monel.
 4. End Connections: Socket or flare.
 5. Working Pressure Rating: **500 psig (3450 kPa)**.
 6. Maximum Operating Temperature: **275 deg F (135 deg C)**.
- K. Moisture/Liquid Indicators:
1. Body: Forged brass.
 2. Window: Replaceable, clear, fused glass window with indicating element protected by filter screen.
 3. Indicator: Color coded to show moisture content in parts per million (ppm).

4. Minimum Moisture Indicator Sensitivity: Indicate moisture above 60 ppm.
 5. End Connections: Socket or flare.
 6. Working Pressure Rating: **500 psig (3450 kPa)**.
 7. Maximum Operating Temperature: **240 deg F (116 deg C)**.
- L. Replaceable-Core Filter Dryers: Comply with AHRI 730.
1. Body and Cover: Painted-steel shell with ductile-iron cover, stainless-steel screws, and neoprene gaskets.
 2. Filter Media: 10 micron, pleated with integral end rings; stainless-steel support.
 3. Desiccant Media: Activated **alumina charcoal**.
 4. Designed for reverse flow (for heat-pump applications).
 5. End Connections: Socket.
 6. Access Ports: **NPS 1/4 (DN 8)** connections at entering and leaving sides for pressure differential measurement.
 7. Maximum Pressure Loss: **2 psig (14 kPa)**.
 8. Rated Flow: See Schedule M-02.
 9. Working Pressure Rating: **500 psig (3450 kPa)**.
 10. Maximum Operating Temperature: **240 deg F (116 deg C)**.
- M. Permanent Filter Dryers: Comply with AHRI 730.
1. Body and Cover: Painted-steel shell.
 2. Filter Media: 10 micron, pleated with integral end rings; stainless-steel support.
 3. Desiccant Media: Activated **alumina charcoal**.
 4. Designed for reverse flow (for heat-pump applications).
 5. End Connections: Socket.
 6. Access Ports: **NPS 1/4 (DN 8)** connections at entering and leaving sides for pressure differential measurement.
 7. Maximum Pressure Loss: **2 psig (14 kPa)**.
 8. Rated Flow: See Schedule M-02.
 9. Working Pressure Rating: **500 psig (3450 kPa)**.
 10. Maximum Operating Temperature: **240 deg F (116 deg C)**.

2.4 REFRIGERANTS

- A. ASHRAE 34, R-410A: Pentafluoroethane/Difluoromethane.

PART 3 - EXECUTION

3.1 PIPING APPLICATIONS FOR REFRIGERANT R-410A

- A. Suction Lines: Copper, Type ACR, annealed-temper tubing and wrought-copper fittings with **brazed** joints.
- B. Hot-Gas and Liquid Lines, and Suction Lines for Heat-Pump Applications: Copper, **Type ACR Type L (B)**, annealed- or drawn-temper tubing and wrought-copper fittings with **brazed** joints.

- C. Hot-Gas and Liquid Lines, **and Suction Lines for Heat-Pump Applications**: Copper, Type **K (A)**, annealed- or drawn-temper tubing and wrought-copper fittings with **brazed** joints.
- D. Hot-Gas and Liquid Lines, **and Suction Lines for Heat-Pump Applications**: Copper, **Type ACR**, drawn-temper tubing and wrought-copper fittings with 95-5 tin-antimony soldered joints.
- E. Hot-Gas and Liquid Lines, **and Suction Lines for Heat-Pump Applications**: Copper, **Type ACR**, drawn-temper tubing and wrought-copper fittings with Alloy HB soldered joints.
- F. Safety-Relief-Valve Discharge Piping: Copper, **Type ACR**, annealed- or drawn-temper tubing and wrought-copper fittings with **brazed** joints.
- G. Safety-Relief-Valve Discharge Piping: Copper, Type **K (A)**, annealed- or drawn-temper tubing and wrought-copper fittings with **brazed** joints.
- H. Safety-Relief-Valve Discharge Piping: Copper, **Type ACR**, drawn-temper tubing and wrought-copper fittings with 95-5 tin-antimony soldered joints.
- I. Safety-Relief-Valve Discharge Piping: Copper, **Type ACR**, drawn-temper tubing and wrought-copper fittings with Alloy HB soldered joints.

3.2 VALVE AND SPECIALTY APPLICATIONS

- A. Install **packed-angle** valves in suction and discharge lines of compressor.
- B. Install service valves for gage taps at inlet and outlet of hot-gas bypass valves and strainers if they are not an integral part of valves and strainers.
- C. Install a check valve at the compressor discharge and a liquid accumulator at the compressor suction connection.
- D. Except as otherwise indicated, install **packed-angle** valves on inlet and outlet side of filter dryers.
- E. Install a full-size, three-valve bypass around filter dryers.
- F. Install solenoid valves upstream from each expansion valve and hot-gas bypass valve. Install solenoid valves in horizontal lines with coil at top.
- G. Install thermostatic expansion valves as close as possible to distributors on evaporators.
 - 1. Install valve so diaphragm case is warmer than bulb.
 - 2. Secure bulb to clean, straight, horizontal section of suction line using two bulb straps. Do not mount bulb in a trap or at bottom of the line.
 - 3. If external equalizer lines are required, make connection where it will reflect suction-line pressure at bulb location.
- H. Install safety relief valves where required by 2010 ASME Boiler and Pressure Vessel Code. Pipe safety-relief-valve discharge line to outside according to ASHRAE 15.

- I. Install moisture/liquid indicators in liquid line at the inlet of the thermostatic expansion valve or at the inlet of the evaporator coil capillary tube.
- J. Install strainers upstream from and adjacent to the following unless they are furnished as an integral assembly for the device being protected:
 - 1. Solenoid valves.
 - 2. Thermostatic expansion valves.
 - 3. Hot-gas bypass valves.
 - 4. Compressor.
- K. Install filter dryers in liquid line between compressor and thermostatic expansion valve, **and in the suction line at the compressor.**
- L. Install receivers sized to accommodate pump-down charge.
- M. Install flexible connectors at compressors.

3.3 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems; indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Shop Drawings.
- B. Install refrigerant piping according to ASHRAE 15.
- C. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
- D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- E. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- F. Install piping adjacent to machines to allow service and maintenance.
- G. Install piping free of sags and bends.
- H. Install fittings for changes in direction and branch connections.
- I. Select system components with pressure rating equal to or greater than system operating pressure.
- J. Install piping as short and direct as possible, with a minimum number of joints, elbows, and fittings.
- K. Arrange piping to allow inspection and service of refrigeration equipment. Install valves and specialties in accessible locations to allow for service and inspection. Install access doors or

panels as specified in Section 083113 "Access Doors and Frames" if valves or equipment requiring maintenance is concealed behind finished surfaces.

- L. Install refrigerant piping in protective conduit where installed belowground.
- M. Install refrigerant piping in rigid or flexible conduit in locations where exposed to mechanical injury.
- N. Slope refrigerant piping as follows:
 - 1. Install horizontal hot-gas discharge piping with a uniform slope downward away from compressor.
 - 2. Install horizontal suction lines with a uniform slope downward to compressor.
 - 3. Install traps and double risers to entrain oil in vertical runs.
 - 4. Liquid lines may be installed level.
- O. When brazing or soldering, remove solenoid-valve coils and sight glasses; also remove valve stems, seats, and packing, and accessible internal parts of refrigerant specialties. Do not apply heat near expansion-valve bulb.
- P. Install piping with adequate clearance between pipe and adjacent walls and hangers or between pipes for insulation installation.
- Q. Identify refrigerant piping and valves according to Section 230553 "Identification for HVAC Piping and Equipment."
- R. Install sleeves for piping penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 230517 "Sleeves and Sleeve Seals for HVAC Piping."
- S. Install sleeve seals for piping penetrations of concrete walls and slabs. Comply with requirements for sleeve seals specified in Section 230517 "Sleeves and Sleeve Seals for HVAC Piping."
- T. Install escutcheons for piping penetrations of walls, ceilings, and floors. Comply with requirements for escutcheons specified in Section 230518 "Escutcheons for HVAC Piping."

3.4 PIPE JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- C. Soldered Joints: Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook."
- D. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," Chapter "Pipe and Tube."
 - 1. Use Type BCuP (copper-phosphorus) alloy for joining copper socket fittings with copper pipe.

2. Use Type BAg (cadmium-free silver) alloy for joining copper with bronze or steel.

3.5 HANGERS AND SUPPORTS

- A. Comply with requirements for pipe hangers and supports specified in Section 230529 "Hangers and Supports for HVAC Piping and Equipment."
- B. Install the following pipe attachments:
 1. Adjustable steel clevis hangers for individual horizontal runs less than 20 feet (6 m) long.
 2. Roller hangers and spring hangers for individual horizontal runs 20 feet (6 m) or longer.
 3. Pipe Roller: MSS SP-58, Type 44 for multiple horizontal piping 20 feet (6 m) or longer, supported on a trapeze.
 4. Spring hangers to support vertical runs.
 5. Copper-clad hangers and supports for hangers and supports in direct contact with copper pipe.
- C. Install hangers for copper tubing with the following maximum spacing and minimum rod diameters:
 1. NPS 1/2 (DN 15): Maximum span, 60 inches (1500 mm); minimum rod, 1/4 inch (6.4 mm).
 2. NPS 5/8 (DN 18): Maximum span, 60 inches (1500 mm); minimum rod, 1/4 inch (6.4 mm).
 3. NPS 1 (DN 25): Maximum span, 72 inches (1800 mm); minimum rod, 1/4 inch (6.4 mm).
 4. NPS 1-1/4 (DN 32): Maximum span, 96 inches (2400 mm); minimum rod, 3/8 inch (9.5 mm).
 5. NPS 1-1/2 (DN 40): Maximum span, 96 inches (2400 mm); minimum rod, 3/8 inch (9.5 mm).
 6. NPS 2 (DN 50): Maximum span, 96 inches (2400 mm); minimum rod, 3/8 inch (9.5 mm).
 7. NPS 2-1/2 (DN 65): Maximum span, 108 inches (2700 mm); minimum rod, 3/8 inch (9.5 mm).
 8. NPS 3 (DN 80): Maximum span, 10 feet (3 m); minimum rod, 3/8 inch (9.5 mm).
 9. NPS 4 (DN 100): Maximum span, 12 feet (3.7 m); minimum rod, 1/2 inch (13 mm).
- D. Support multifloor vertical runs at least at each floor.

3.6 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
 1. Comply with ASME B31.5, Chapter VI.
 2. Test refrigerant piping, specialties, and receivers. Isolate compressor, condenser, evaporator, and safety devices from test pressure if they are not rated above the test pressure.
 3. Test high- and low-pressure side piping of each system separately at not less than the pressures indicated in "Performance Requirements" Article.
 - a. Fill system with nitrogen to the required test pressure.

- b. System shall maintain test pressure at the manifold gage throughout duration of test.
 - c. Test joints and fittings with electronic leak detector or by brushing a small amount of soap and glycerin solution over joints.
 - d. Remake leaking joints using new materials, and retest until satisfactory results are achieved.
- B. Prepare test and inspection reports.

3.7 SYSTEM CHARGING

- A. Charge system using the following procedures:
- 1. Install core in filter dryers after leak test but before evacuation.
 - 2. Evacuate entire refrigerant system with a vacuum pump to **500 micrometers (67 Pa)**. If vacuum holds for 12 hours, system is ready for charging.
 - 3. Break vacuum with refrigerant gas, allowing pressure to build up to **2 psig (14 kPa)**.
 - 4. Charge system with a new filter-dryer core in charging line.

3.8 ADJUSTING

- A. Adjust thermostatic expansion valve to obtain proper evaporator superheat.
- B. Adjust high- and low-pressure switch settings to avoid short cycling in response to fluctuating suction pressure.
- C. Adjust set-point temperature of air-conditioning or chilled-water controllers to the system design temperature.
- D. Perform the following adjustments before operating the refrigeration system, according to manufacturer's written instructions:
- 1. Open shutoff valves in condenser water circuit.
 - 2. Verify that compressor oil level is correct.
 - 3. Open compressor suction and discharge valves.
 - 4. Open refrigerant valves except bypass valves that are used for other purposes.
 - 5. Check open compressor-motor alignment and verify lubrication for motors and bearings.
- E. Replace core of replaceable filter dryer after system has been adjusted and after design flow rates and pressures are established.

END OF SECTION 232300

SECTION 238126 - SPLIT-SYSTEM AIR-CONDITIONERS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes split-system air-conditioning and heat-pump units consisting of separate evaporator-fan and compressor-condenser components.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. LEED Submittals:
 - 1. Product Data for Credit EA 4: Documentation indicating that equipment and refrigerants comply.
 - 2. Product Data for Prerequisite IEQ 1: Documentation indicating that units comply with ASHRAE 62.1, Section 5 - "Systems and Equipment."
- C. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

1.3 INFORMATIONAL SUBMITTALS

- A. Warranty: Sample of special warranty.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. ASHRAE Compliance:
 - 1. Fabricate and label refrigeration system to comply with ASHRAE 15, "Safety Standard for Refrigeration Systems."

2. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 4 - "Outdoor Air Quality," Section 5 - "Systems and Equipment," Section 6 - "Procedures," and Section 7 - "Construction and System Start-up."

- C. ASHRAE/IESNA Compliance: Applicable requirements in ASHRAE/IESNA 90.1.

1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of split-system air-conditioning units that fail in materials or workmanship within specified warranty period.

1. Warranty Period:

- a. For Compressor: **Five** year(s) from date of Substantial Completion.
- b. For Parts: **One** year(s) from date of Substantial Completion.
- c. For Labor: **One** year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 INDOOR UNITS

- A. Wall-Mounted, Evaporator-Fan Components:

1. Cabinet: Enameled steel with removable panels on front and ends in color selected by Architect, and discharge drain pans with drain connection.
2. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins and thermal-expansion valve. Comply with ARI 206/110.
3. Electric Coil: Helical, nickel-chrome, resistance-wire heating elements; with refractory ceramic support bushings, automatic-reset thermal cutout, built-in magnetic contactors, manual-reset thermal cutout, airflow proving device, and one-time fuses in terminal box for overcurrent protection.
4. Fan: Direct drive, centrifugal.
5. Fan Motors:
 - a. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements specified in Section 230513 "Common Motor Requirements for HVAC Equipment."
 - b. Multitapped, multispeed with internal thermal protection and permanent lubrication.
 - c. Enclosure Type: Totally enclosed, fan cooled.
 - d. NEMA Premium (TM) efficient motors as defined in NEMA MG 1.
 - e. Controllers, Electrical Devices, and Wiring: Comply with requirements for electrical devices and connections specified in electrical Sections.
 - f. Mount unit-mounted disconnect switches.
6. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.

7. Condensate Drain Pans:
 - a. Fabricated with **two** percent slope in at least two planes to collect condensate from cooling coils (including coil piping connections, coil headers, and return bends) and humidifiers, and to direct water toward drain connection.
 - 1) Length: Extend drain pan downstream from leaving face **to comply with ASHRAE 62.1**.
 - 2) Depth: A minimum of **1 inch (25 mm)** deep.
 - b. Single-wall, **stainless**-steel sheet.
 - c. Double-wall, **stainless**-steel sheet with space between walls filled with foam insulation and moisture-tight seal.
 - d. Drain Connection: Located at lowest point of pan and sized to prevent overflow. Terminate with threaded nipple on **both ends** of pan.
 - 1) Minimum Connection Size: **NPS 1 (DN 25) NPS 2 (DN 50)**.
 - e. Pan-Top Surface Coating: Asphaltic waterproofing compound.
8. Air Filtration Section:
 - a. General Requirements for Air Filtration Section:
 - 1) Comply with NFPA 90A.
 - 2) Minimum Arrestance: According to ASHRAE 52.1 and MERV according to ASHRAE 52.2.
 - 3) Filter-Holding Frames: Arranged for flat or angular orientation, with access doors on both sides of unit. Filters shall be removable from one side or lifted out from access plenum.
 - b. Disposable Panel Filters:
 - 1) Factory-fabricated, viscous-coated, flat-panel type.
 - 2) Thickness: **1 inch (25 mm)**.
 - 3) Dust-Holding Capacity:
 - 4) Initial Resistance:
 - 5) Recommended Final Resistance:
 - 6) Arrestance according to ASHRAE 52.1:
 - 7) Merv according to ASHRAE 52.2:
 - 8) Media: Interlaced glass fibers sprayed with nonflammable adhesive.
 - 9) Frame: Galvanized steel, with metal grid on outlet side, steel rod grid on inlet side, and hinged; with pull and retaining handles.
 - c. Extended-Surface, Disposable Panel Filters:
 - 1) Factory-fabricated, dry, extended-surface type.
 - 2) Thickness: **2 inches (50 mm)**
 - 3) Dust-Holding Capacity:
 - 4) Initial Resistance:
 - 5) Recommended Final Resistance:

- 6) Arrestance according to ASHRAE 52.1:
- 7) Merv according to ASHRAE 52.2:
- 8) Media: Fibrous material formed into deep-V-shaped pleats and held by self-supporting wire grid.
- 9) Media-Grid Frame: **Fire-retardant, 3/4-inch particleboard with gaskets.**
- 10) Mounting Frames: Welded, galvanized steel, with gaskets and fasteners; suitable for bolting together into built-up filter banks.

2.2 OUTDOOR UNITS

A. Air-Cooled, Compressor-Condenser Components:

1. Casing: Steel, finished with baked enamel in color selected by Architect, with removable panels for access to controls, weep holes for water drainage, and mounting holes in base. Provide brass service valves, fittings, and gage ports on exterior of casing.
2. Compressor: Hermetically sealed with crankcase heater and mounted on vibration isolation device. Compressor motor shall have thermal- and current-sensitive overload devices, start capacitor, relay, and contactor.
 - a. Compressor Type: Scroll.
 - b. Two-speed compressor motor with manual-reset high-pressure switch and automatic-reset low-pressure switch.
 - c. Refrigerant Charge: **R-410A**
 - d. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins and liquid subcooler. Comply with ARI 206/110.
3. Heat-Pump Components: Reversing valve and low-temperature-air cutoff thermostat.
4. Fan: Aluminum-propeller type, directly connected to motor.
5. Motor: Permanently lubricated, with integral thermal-overload protection.
6. Low Ambient Kit: Permits operation down to **45 deg F (7 deg C)**.
7. Mounting Base: Polyethylene.

2.3 ACCESSORIES

- A. Thermostat: Low voltage with subbase to control compressor and evaporator fan.
- B. Thermostat: Wireless infrared functioning to remotely control compressor and evaporator fan, with the following features:
 1. Compressor time delay.
 2. 24-hour time control of system stop and start.
 3. Liquid-crystal display indicating temperature, set-point temperature, time setting, operating mode, and fan speed.
 4. Fan-speed selection including auto setting.
- C. Automatic-reset timer to prevent rapid cycling of compressor.
- D. Refrigerant Line Kits: Soft-annealed copper suction and liquid lines factory cleaned, dried, pressurized, and sealed; factory-insulated suction line with flared fittings at both ends.

- E. Drain Hose: For condensate.
- F. Additional Monitoring:
 - 1. Monitor constant and variable motor loads.
 - 2. Monitor variable-frequency-drive operation.
 - 3. Monitor economizer cycle.
 - 4. Monitor cooling load.
 - 5. Monitor air distribution static pressure and ventilation air volumes.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install units level and plumb.
- B. Install evaporator-fan components using manufacturer's standard mounting devices securely fastened to building structure.
- C. Install roof-mounted, compressor-condenser components on equipment supports specified in Section 077200 "Roof Accessories." Anchor units to supports with removable, cadmium-plated fasteners.
- D. Equipment Mounting:
 - 1. Install ground-mounted, compressor-condenser components on cast-in-place concrete equipment base(s). Comply with requirements for equipment bases and foundations.
 - 2. Install ground-mounted, compressor-condenser components on polyethylene mounting base.
 - 3. Comply with requirements for vibration isolation and seismic control devices specified in Section 230548 "Vibration and Seismic Controls for HVAC."
 - 4. Comply with requirements for vibration isolation devices specified in Section 230548.13 "Vibration Controls for HVAC."
- E. Install and connect precharged refrigerant tubing to component's quick-connect fittings. Install tubing to allow access to unit.

3.2 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- B. Tests and Inspections:
 - 1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.

2. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
 3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- C. Remove and replace malfunctioning units and retest as specified above.
- D. Prepare test and inspection reports.

END OF SECTION 238126

**SECTION 260000
ELECTRICAL WORK**

PART I – GENERAL

1-01 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT and GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.
- 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.

1-02 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.

1-03 RELATED WORK

- A. ALL DIVISION 26 SPECIFICATIONS
- B. Section 23 00 00 HEATING, VENTILATING & AIR-
CONDITIONING (HVAC)

1-04 GENERAL

- A. The General Conditions and Supplementary General Conditions of these specifications are hereby made a part of this Section.
- B. Refer to drawings for further definition of location, extent, and details of work described herein.
- C. Cooperate and coordinate with other trades in executing work as described in this Section.
- D. 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. Perform work in accordance with NFPA -70 : National Electrical Code , NFPA: Life Safety Code , Massachusetts State Building Code Applicable Massachusetts State Administrative Code, Applicable Town Ordinance, Electric Utility rules and regulations.

1-05 SCOPE

- A. Work described herein shall be interpreted as work to be done by the Electrical Subcontractor. Work to be performed by other trades will be referenced to a particular contractor or subcontractor.
- B. Provide all labor, materials, tools, and equipment, including scaffolding, to complete the installation of the electrical system. Install, equip, adjust, and put into operation the respective portions of the installation specified, and so interconnect various items or sections of work in order to form a complete and operating whole. The work shall consist of, but shall not necessarily be limited to, the following:
 - 1. Disconnect and remove or relocate existing devices, as indicated on contract drawings.
 - 2. Provide electrical connections to ductless multizone systems to cover (4) conference rooms and the OEFM's hallway, provide power to receptacles and disconnect switches as indicated on drawings.
 - 3. Drilling, coring, and cutting of holes and openings

4. Scaffolding, rigging, and staging required for all electrical work.
5. Fire stopping shall be performed by the electrical contractor.
6. Phasing and demolition.
7. Excavation and backfill for electrical work.
8. Foundations and Pads required for equipment furnished under this division of specifications.
9. Finishing and sealing of conduits through outside wall.
10. All testing of equipment installed.

1-06 INSPECTION OF SITE

- A. It is optional, for the Electrical bidders to inspect site. Failure to inspect existing conditions or to fully understand work which is required shall not excuse Electrical Subcontractor from his obligations to supply and install work in accordance with specifications and the drawings and under all site conditions, as they exist.

1-07 COOPERATION

- A. Work shall be carried on under usual construction conditions, in conjunction with other contractors' work. Cooperate with other contractors, coordinate work, and proceed in a manner as not to delay progress.
- B. Before proceeding, examine all construction drawings and consult other contractors to coordinate installation and avoid interference.
- C. In case of dispute, the Engineer will render a decision in accordance with General and Supplementary General Conditions.

1-08 SUBMITTALS

- A. Provide submittals, with cut sheets, for equipment as outlined in this Specification and as outlined on the bid drawings. Identify project, contractor, supplier and pertinent drawing and specification numbers.
- B. Provide submittals for the following electrical equipment:
 1. Wiring Devices: Switch Controls, Receptacles, and Cover Plates
 2. Outlet Boxes, Junction Boxes, and Pull Boxes
 3. Conduits, Fittings, Brackets and Supports

- 4. Wire and Cable
- C. No equipment requiring shop drawings shall be ordered prior to Project Engineer's approval of Shop Drawings.
- D. No installations of electrical systems may be started without Project Engineer's approval of shop drawings.
- E. Within thirty (30) days of contract award, submit one (1) PDF file of all shop drawings to the Engineer.

1-09 REGULATORY REQUIREMENTS

- A. Conform to Massachusetts State Building Code, Electrical section and requirements of all other authorities having jurisdiction over the project.
- B. Perform work in accordance with current standards: NFPA -70, NEC - National Electrical Code, NFPA- Life Safety Code , Electric Utility rules and regulations
- C. Contractor shall pay for and obtain all necessary permits and arrange for all inspections from local authorities having jurisdiction over the project.

1-10 PROJECT/SITE CONDITIONS

- A. Coordinate with the facilities management for access and coordination of all work.

PART 2 – PRODUCTS

2-01 RACEWAY

- A. **Electrical Metallic Tubing (EMT) and Fittings**
 - 1. Location: Used for electrical circuitry exposed in stairwells, basement areas, mechanical rooms, and storage areas.
 - 2. EMT shall meet ANSI C80.3.
 - 3. Fittings and conduit bodies shall meet ANSI/NEMA FB 1: steel, setscrew type.
- B. **MC Wiring**
 - 1. Shall Conform to SNDI V80.3.

2. May be utilized for power circuits throughout building where concealed.

C. **Conduit Supports**

1. Conduit clamps, straps and supports; steel or malleable iron.
2. Hardware shall be corrosion resistant.

2-02 **WIRE**

- A. Thermoplastic-insulated building wire, NEMA WC 5; or Rubber-insulated building wire, NEMA WC 3.
- B. Feeders and branch circuits: Copper conductor, 600-volt insulation, type THW, rated 75 degree C, solid conductor.
- C. No aluminum wire will be accepted.
- D. Outlet Boxes, Pull and Junction Boxes:
 1. Sheet Metal Outlet Boxes: ANSI/NEMA OS 1: galvanized steel, with ½-inch male fixtures studs where required. PVC boxes may be used in lieu of sheet metal where concealed.
 2. Cast Boxes: Aluminum, cast ferroalloy, deep type, gasket cover, threaded hubs.
- E. RS-232 Cable
 5. Plenum-Rated Cable: NFPA 70, Type CMP
 6. Comply with manufacturer's recommended cable type.
- F. RS-485 Cable
 1. Plenum-Rated Cable: NFPA 70, Type CMP
 2. Comply with manufacturer's recommended cable type.

- G. Low Voltage Control Cable
 - 1. Plenum-Rated, Paired Cable: NFPA 70, Type CMP
 - 2. Comply with manufacturer's recommended cable type.

2-03 WIRING DEVICES

- A. Wall switches and receptacles: Leviton.
- B. Cover Plates: Stainless steel, Leviton.

PART 3 – EXECUTION

3-01 WORK COORDINATION AND JOB OPERATIONS

- A. Carefully examine specifications, drawing and project site to be thoroughly familiar with items which require electrical connections and coordination. Electrical drawings are diagrammatic and shall not be scaled for exact sizes.
- B. Equipment shall not be installed in congested and possible problem areas without first coordinating installation of same with other trades. Relocate electrical equipment installed in congested or problem areas should it interfere with the proper installation of equipment to be installed by other trades.
- C. Furnish to General Contractor and other subcontractors' information relative to portions of electrical installation that will affect other trades sufficiently in advance so that they may plan their work and installation.
- D. Obtain from other trades information relative to electrical work which he, the Electrical Subcontractor, is to execute in conjunction with installation of other trades' equipment.
- E. On completion of work, installation shall be completely operational and entirely free from ground, short circuit, and open circuits. Perform a thorough operational test in presence of the Engineer.

3-02 PROTECTION AND CLEANUP

- A. Protection
 - 1. Materials and equipment shall be suitably stored and protected from weather.
 - a. During progress of work, pipe and equipment openings shall be temporarily closed so as to prevent obstruction and damage.
 - b. Be responsible for maintenance and protection of material and equipment until final acceptance.
- B. Cleanup
 - 1. Keep job site free from accumulation of waste material and rubbish. Remove all rubbish, construction equipment, and surplus materials from site and leave premises in a clean condition.
 - a. At completion, equipment with factory finished surfaces shall be cleaned and damaged spots touched up with the same type of

paint applied at factory.

- b. Particular attention is called to Section 110 12(c) of the NEC, which requires that internal parts of electrical equipment not be contaminated by construction operations.

3-03 WORKMANSHIP AND INSTALLATION METHODS

- A. Work shall be installed in first class manner consistent with best current trade practices. Equipment shall be securely installed plumb and/or level. Flush mounted outlet boxes shall have front edge flush with finished wall surface. No electrical equipment shall be supported by work of other trades. Cable systems shall be supported and not draped over ducts and piping or laid on ceiling

suspension members.

3-04 CUTTING AND PATCHING

- A. All cutting of surfaces, including core drilling of walls and slabs, shall be done by Electrical Subcontractor. Openings through new wall surfaces will be provided by General Contractor if Electrical Subcontractor gives suitable notice as erection of surface proceeds. If suitable notice is not given, Electrical Subcontractor shall then be responsible for cost of corrective work required.
- B. Patching will be provided by the trade responsible for the surface to be patched.

3-05 MECHANICAL SYSTEM COORDINATION

- A. The Contractor will be providing various items of mechanical services equipment and control apparatus. In general, Electrical Subcontractor shall connect up power wiring to this equipment. The Contractor and Electrical Subcontractor shall closely coordinate their respective portions of work.

3-06 WORK IN EXISTING BUILDING

- A. The existing building is occupied and will continue to be so during construction. The electrical work shall be done so as to not disrupt existing operation of Owner or his tenants.
- B. Any shutdowns of electricity shall be coordinated with the General Contractor's and Owner's representatives at least 48 hours in advance. Shutdowns which, in the opinion of the Owner, are a minor nature not affecting the operation, may be allowed during normal working hours. Other shutdowns will only be allowed on off hours, shall be properly scheduled in advance, and shall not be greater than a 4-hour continuous duration.
- C. No existing system shall be left inoperable at any time, except for short periods during normal working hours.
- D. Any new work required to pass through occupied areas shall be done at other than normal working hours.
- E. No energized exposed conductors will be allowed to remain unattended where accessible to the public or the Owner's staff. The Electrical Subcontractor shall be completely responsible for protection and guarding the electrical system during the work so as to not create a hazard.
- F. Comply with the Owner's requirements concerning work rules in existing buildings, especially with respect to noise, drilling and cutting, etc.

3-07 DEMOLITION, REMOVAL, AND RELOCATION WORK

- A. The Electrical Subcontractor shall be responsible for disconnection and making dead of existing electrical equipment and wiring systems no longer needed within the renovated areas. Removal of existing fixtures, wiring, raceways, boxes, cabinets, devices, etc. within the renovated area, and store at a single location in the building where work is being done.
- B. Where devices are to be removed, existing conductors shall be removed back to the last outlet which is to remain.
- C. Existing raceways, boxes, and other electrical devices which serve equipment being removed shall be removed completely, wherever they are installed either surface, concealed, or flush mounted, within or on walls or in ceilings which are being removed. If they are on existing walls or in ceilings which are to remain, surface raceways and boxes shall be removed, but flush mounted raceways and boxes may be abandoned in place. If such remaining walls or ceilings are being refinished with a new surface material, the flush boxes shall be made to be back far enough from the surface so the new surfacing material may be installed without interruption. Where a new finish, such as paint, is to be applied and with the agreement of the architect, the existing boxes shall be covered with blank plates.
- D. Any existing equipment that that is to remain after removal of other equipment shall be refed for a complete operating at no additional cost to the Owner.
- E. All equipment removed shall be stockpiled in a location specified by the Owner. Any equipment not wanted by the Owner shall be removed from the site and properly disposed of by this Contractor. Certificates will be provided attesting to legal disposal of electrical materials classified as hazardous.
- F. The Contractor may expect that the installation of new construction and/or equipment, either by the Electrical Subcontractors or other Contractors or Subcontractors, may necessitate minor relocations of existing electrical equipment, such as pull or junction boxes. The installation of new large size equipment, such as ductwork and fan boxes, takes precedence over existing small electrical equipment, such as raceways, pull or junction boxes. Any equipment that is deemed to be in the way of new construction or equipment shall be relocated as necessary, without additional cost to the Owner.

END OF SECTION

SECTION 260519 - LOW-VOLTAGE POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.01 - SECTION INCLUDES

- A. Wires and cables.
- B. In general, the wires and cables included under this Section shall include, but not be limited to, the following:
 - 1. Conductors for power and controls
- C. All conductors to be continuous from origin to panel or equipment termination without splices.

1.02 - REFERENCES

- A. ANSI/NFPA 70 - National Electric Code.
- B. NECA Standard of Installations.

1.03 - SUBMITTALS

- A. Submit product data.

1.04 – QUALITY ASSURANCE

- A. Products used in the work of this Section shall be produced by manufacturers regularly engaged in the manufacturing, installing and servicing of similar items with a history of successful production acceptable to the Engineer as specified herein and in accordance with the General Conditions.
- B. Contractor shall submit the following information pertaining to the manufacturer(s):
 - 1. Complete literature, performance, and technical data describing the proposed equipment and listing of items made by the manufacturer.
 - 2. Location of closest service office from which this equipment shall be serviced.
 - 3. Location of closest parts inventory for item installation.

1.05 - COORDINATION

A. Coordination:

1. Coordinate wire and cable required with the equipment being furnished by others for the satisfactory operation of the equipment or system.
2. Review installation procedures under other sections and contracts and coordinate them with the work specified herein.
3. Notify other prime contractors in advance of the installation of the work included to provide them with sufficient time for installation and coordination of interrelated items that are included in their contracts and that must be installed in conjunction with the work included in this Section.

1.06 - PROJECT CONDITIONS

- A. Verify that embedded conduit, in masonry and concrete, is installed as shown on the Drawings prior to the work being enclosed by others.
- B. The Contractor shall be present at all concrete pours.
- C. Conductor sizes are based on copper at 75°C.
- D. Wire and cable routing shown on Drawings is approximate unless dimensioned or specifically called for such as where conduit is to be embedded in concrete or masonry. Route wire and cable as required to meet project conditions and shall be routed above ceilings, directly under joists, in pipe trenches, where available, and in masonry. Where exposed conduit is permitted, it shall be run to maximize wall space.
- E. Field verify destination location to determine cable routing.
- F. Where wire and cable routing is not shown for proposed destination, determine exact routing and lengths required. Routing shall be reviewed with the Engineer.

PART 2 - PRODUCTS

2.01 - CONDUCTORS

- A. Install products in accordance with manufacturer's recommendations.
- B. Single copper conductors with 600-volt insulation.
- C. Minimum size of feeder conductors and grounds shall be No. 12 AWG.

- D. Insulation: Provide ANSI/NFPA 70, Type THWN-2.
- E. Use solid conductor for feeder and branch circuits, 10 AWG and smaller.
- F. All conductors shall include complete set of manufacturer's markings for insulation and conductor size.
- G. Manufacturers shall be ANACONDA, TRIANGLE, ROME, or approved equal.
- H. Provide white colored neutral conductors; provide black, color coded phase conductors; provide green colored ground conductors.
- I. Electric secondary service overhead conductors shall be Quadruplex service drop aluminum conductors. Manufacturers shall be Southwire, Priority Wire & Cable, Inc. or approved equal. Overhead service conductors shall be installed in accordance with utility requirements.

2.02 - MECHANICAL CONNECTORS

- A. Conductor tapping connectors shall be BURNDY Servit split bolt, Series KS and KS3, or approved equal.
- B. Split bolt connectors shall use BURNDY Type SC Servit cover on indoor applications.
- C. Terminal lugs shall be BURNDY Universal Terminal Series. Terminal lugs shall be sized for proper ampacity and proper number of conductor holes. Each conductor shall occupy only one hole on a terminal lug.
- D. Conductor tapping connectors for multiple conductors shall be BURNDY Series V-Tap with V-Tap covers, and V-Blok mounting platforms.

PART 3 - EXECUTION

3.01 - INSTALLATION

- A. General:
 - 1. Make terminations in accordance with cable manufacturers instructions for the particular type of wire and cable.
 - 2. Splices are not allowed in the underground duct and manhole systems. If splices are required, the Contractor shall obtain approval in writing from the Engineer prior to splicing.
 - 3. All splices shall be in made in terminal boxes.

- B. Wire and Cable Sizes: The sizes of wire and cable shall be as shown on the Contract Drawings, or if not shown, as approved by the Engineer. Minimum size wire shall be No. 12 AWG for all power, lighting and receptacle circuits. Wires for control circuits shall be No. 14 AWG minimum. If due to field routing the voltage drop exceeds 2.5%, the size of conductors shall be increased such that 2.5% is the maximum voltage drop incurred.
- C. Number of Wires: The number of wires indicated on the Contract Drawings for the various control, indications, and metering circuits were determined for general schemes of control and for particular indication and metering systems. Coordinate wiring schemes with equipment schematics.
- D. Wiring Identification: All wiring shall have a unique wire number and be labeled at both ends. Wire numbers shall correspond with the equipment terminal wire numbers. Where no wire numbers are indicated, the Contractor shall assign wire numbers. Wire numbers shall not be duplicated.
- E. Cable Identification Tags: The Contractor shall furnish all labor and materials and affix in a permanent way to each cable in manholes, cable compartments and vaults, junction boxes, pull boxes and points of termination, a laminated plastic tag, bearing clearly printed, the cable number indicated on the Contract Drawings or some other approved identification number or symbol. All cables shall be temporarily tagged with its full ID number immediately after it has been pulled.
- F. Wiring Supplies: Only electrical wiring supplies manufactured under high standards of production and meeting the approval of the Engineer shall be used. Rubber insulating tape shall be in accordance with ASTM D119 Friction tape shall be in accordance with ASTM D69.
- G. Training of Cable: Furnish all labor and material required to train cables around cable vaults within buildings and in manholes in any outdoor underground duct system. Sufficient length of cable shall be provided in each manhole and vault so that the cable can be trained and racked in an approved manner. In training or racking, the radius of bend of any cable shall be not less than the manufacturer's recommendation. All manhole cables shall be arc and fireproofed.
- H. Connections at Control Panels, Limit Switches and Similar Devices:
1. Where stranded wires are terminated at panels, and/or devices connections shall be made by solderless lug, crimp type ferrule or solder dipped.
 2. Where enclosure sizes and sizes of terminals at limit switches, solenoid valves, float switches, pressure switches, temperature switches, and other devices make 7-strand, No. 12 AWG, wire terminations impractical, the Contractor shall terminate external circuits in an adjacent junction box of proper size and shall install No. 14 AWG stranded wires to the junction box in a conduit.

- I. Pulling Temperature: Cable shall not be flexed or pulled when the temperature of the insulation or of the jacket is such that damage will occur due to low temperature embrittlement. When cable will be pulled with an ambient temperature within a three day period prior to pulling of 40°F or lower, cable reels shall be stored during the three day period prior to pulling in a protected storage with an ambient temperature not lower than 55EF and pulling shall be completed during the work day for which the cable is removed from the protected storage.
- J. Color Coding:
1. Conductor jacket shall be color coded as follows:

AC POWER
240/120 Volt, 3φ
Phase A - Blue
Phase B - Black
Phase C - Red
Neutral – White
Ground – Green

3.02 - IDENTIFICATION

- A. Identify wire and cable under provisions of Section 260553.
- B. Identify each conductor with its circuit number.

3.03 - FIELD QUALITY CONTROL

- A. Perform field inspection and testing under provisions of Section 014500.
- B. Inspect wire and cable for physical damage and proper connection.
- C. Measure tightness of bolted connections and compare torque measurements with manufacturer's recommended values.
- D. Field Testing:
 1. Wires and cables shall be tested before being connected to motors, devices or terminal blocks.
 2. If tests reveal defects or deficiencies, the Contractor shall make the necessary repairs or shall replace the cable as directed by the Engineer, without additional cost to the Owner.
 3. All tests shall be made by and at the expense of the Contractor who shall supply all

testing equipment.

- E. Continuity Tests: All cables, wires and shields shall be tested for continuity. Testing for continuity shall be by test light or buzzer.
- F. Insulation-Resistance Tests:
 - 1. 600V power and control cables and wires shall be tested for their insulation-resistance values. Test shall utilize a megohmmeter with applied voltage to be 1000VDC for one (1) minute. Insulation-resistance test shall be performed on each conductor with all other conductors grounded. The resistance value shall be 20 megohms or greater.

END OF SECTION 260519

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL EQUIPMENT

PART 1 - GENERAL

1.01 - SECTION INCLUDES

- A. Grounding electrodes and conductors.
- B. Equipment grounding conductors.
- C. Bonding.

1.02 - REFERENCES

- A. ANSI/NFPA 70 - National Electric Code.

1.03 - REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc.

PART 2 - PRODUCTS

2.01 - COMPONENTS

- A. Ground clamps: OZ ELECTRICAL MANUFACTURING COMPANY, Type "CG", or equal by STEEL CITY or APPLETON.
- B. Raceways, conductors, outlet boxes, pull and junction boxes to be furnished in accordance with applicable sections of these specifications.
- C. Rod Electrode: Copper, 3/4-inch diameter, ten (10) feet long.
- D. Wire: Copper, sized to meet NFPA 70 requirements.

PART 3 - EXECUTION

3.01 - INSTALLATION

A. General:

1. Clean all conductive surfaces on equipment to be grounded, to assure good electrical continuity.
2. Effectively bond all grounding conductors to grounding rod electrodes, equipment enclosures and ground busses.
3. Locate all grounding attachments away from areas subject to physical damage. Provide protective covering as required.
4. Install service entrance building ground as per NEC and PSEG requirements.
5. Service entrance shall be bonded to street side of first flange or coupling of incoming main water line with heavy duty ground clamp. Bonding conductor to be sized in accordance with NFPA 70.
6. Building steel shall be bonded to ground bus on main service with a conductor the same size as in B.1 below.
7. Generators shall have a dedicated grounding system bonded to ground rods and steel base.
8. Install new service grounds and grounding systems for new service as per PSEG and NEC requirements.

B. Feeder/Branch Circuits:

1. All circuits shall have a separate green grounding conductor in conduit sized in accordance with NFPA 70. Minimum size of conductor shall be No. 12 AWG.
2. Flexible conduit will not be approved as achieving continuity of ground. All flexible conduit to have a jumper wire sized to ampacity of branch breaker and to be connected to conduit system on both ends; this applies to fixtures, motors, controls, etc.

3.02 - TEST

- A. Test new main grounding electrode system. The main grounding electrode shall provide a low impedance back to the neutral bond.

- B. Investigate point-to-point resistance values that exceed 0.5 ohm.

END OF SECTION 260526

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.01 - SECTION INCLUDES

- A. System of supporting devices and hangers for support or bracing for conduit, electrical equipment, safety switches, fixtures, panelboards, outlet boxes, junction boxes and cabinets.

1.02 - REFERENCES

- A. ANSI/NFPA 70 - National Electric Code.

1.03 - REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc.

PART 2 - PRODUCTS

2.01 - EQUIPMENT REQUIREMENTS

- A. Provide appropriate corrosion-resistant supporting devices and hangers for electrical equipment, as manufactured by ERICO PRODUCTS, INC., CADDY FASTENERS, STEEL CITY, MINERALLAC or equivalent.
 - 1. "Z" purlin clips.
 - 2. Conduit clips.
 - 3. Beam clamps (universal and vertical flange).
 - 4. Beam clamps (set screw type).
 - 5. Combination push-in conduit clips.
 - 6. Combination conduit hanger clamps.
 - 7. Flexible conduit clips.
 - 8. Special combination conduit clips.

9. One hole steel straps.
 10. Conduit hangers.
- B. Provide materials, sizes and types of anchors, fasteners and supports to carry the loads of equipment, wire in conduit and conduit.

2.02 - CHANNEL SUPPORT SYSTEM

- A. Channel systems and supports shall be manufactured by KINDORF/THOMAS & BETTS, or approved equal.
- B. Channels shall be 1-1/2" x 1-1/2".
- C. Channels shall be hot-dipped galvanized.
- D. Channels shall have 9/16" bolt holes on 1-1/2" centers.
- E. Provide end caps for all channels.

PART 3 - EXECUTION

3.01 - INSTALLATION

- A. Secure conduits to within 3 feet of each outlet box, junction box, cabinet, fitting, etc., and at intervals not to exceed 10 feet in accordance with currently effective edition of the National Electric Code.
- B. Install clamps secured to structure for feeder and other conduits routed against structure. Use drop rods and hangers to support conduits run apart from the structure.
- C. Provide and install suitable angle iron, channel iron or steel metal framing with accessories to support or brace electrical equipment including safety switches, fixtures, panelboards, etc.
- D. Paint all supporting metal not otherwise protected, with rust inhibiting primer and then with a finish coat if appropriate to match the surrounding metal surfaces. Prepainted or galvanized support material is not required to be painted or repainted.
- E. Do not use chains, perforated iron, baling wire or tie wire for supporting conduit runs. Use of clips to support conduit to top of t-bar ceiling grid will not be permitted.
- F. Obtain permission from Engineer before drilling or cutting structural members.

- G. Install surface mounted cabinets and panelboards with a minimum of four anchors.
- H. Do not fasten supports to pipes, ducts, mechanical equipment and conduit.
- I. Install products in accordance with manufacturer's instructions.

END OF SECTION 260529

SECTION 260534 - PULL BOXES ,JUNCTION AND WIRE WAYS

PART 1 - GENERAL

1.01 - SECTION INCLUDES

- A. Junction boxes.
- B. Wireways.

1.02 - RELATED SECTIONS

- A. Section 260529 – Hangers and Supports for Electrical Systems.
- B. Section 260535 - Conduit.

1.03 - REFERENCES

- A. NECA - Standard of Installation.
- B. ANSI/NEMA OS1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers and Box Supports.
- C. NEMA FB1 - Fittings and Supports for Conduit and Cable Assemblies.
- D. ANSI/NFPA 70 - National Electric Code.
- E. NEMA 250 - Enclosures for Electrical Equipment (1000 volts maximum).

1.04 - REGULATORY REQUIREMENTS

- A. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

PART 2 - PRODUCTS

2.01 - JUNCTION BOXES

- A. Acceptable Manufacturers: RACO, GENERAL ELECTRIC or approved equal.
- B. Sheet metal boxes: NEMA OS1, galvanized steel.
- C. Covers: Galvanized steel.

2.02 – WIRE TROUGH

- A. Wireway shall be manufactured by SQUARE D, Class 5100, Nema 1- General Purpose or approved equal.
- B. Wireway shall be completely enclosed with removable front cover.
- C. Construction: 16 gauge steel. 8-inch and 12-inch wire trough shall be 14 gauge steel.
- D. Finish: ANSI-49 gray epoxy paint applied by cathodic electro-deposition paint process.
- E. UL listed.

PART 3 - EXECUTION

3.01 - INSTALLATION

- A. Provide junction boxes as shown on Drawings and otherwise where required, sized according to number of conductors in box or type of service to be provided. Minimum junction box size 4-inch square and 2-1/8-inches deep. Provide screw covers for junction boxes.
- B. Install boxes in conduit runs wherever necessary to avoid long runs or too many bends. Do not exceed 100-foot runs without pull boxes. Install pull boxes at all 90-degree bends.
- C. Rigidly secure boxes to walls or ceilings. Conduit runs will not be considered adequate support.
- D. Install boxes with covers in accessible locations. Size boxes in accordance with the National Electric Code.
- E. Do not install pull boxes or junction boxes for joint use of line voltage and signal or low voltage controls unless all conductors are insulated for the highest voltage being used in the same box.
- F. Coordinate installation of exterior pull boxes to establish elevations of finished grades and pavements. All castings shall have chimney adjustment of $\pm 6"$.

END OF SECTION 260534

SECTION 260535 – CONDUITS

PART 1 - GENERAL

1.01 - SECTION INCLUDES

- A. Conduit system with associated couplings, connectors and fittings.
- B. Conduits to be mechanically and electrically continuous from outlet to outlet and from outlets to cabinets, pull or junction boxes.
 - 1. Conduit Use - Rigid Galvanized Conduit:
 - a. All exterior above ground circuits.
 - 2. Conduit Use - PVC Sch. 80
 - a. Secondary service power feeds from existing electrical service manhole to utility meter only.
 - b. All exterior below grade circuits.
 - 3. Conduit Use – Electrical Metallic Tubing (EMT) Conduit:
 - a. All interior above ground circuits.
 - 4. Conduit Use – Metal Clad (MC) Cable:
 - a. All 15 and 20 amp branch circuits concealed in walls or ceilings.

1.02 - REFERENCES

- A. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.
- B. ANSI/NFPA 70 - National Electric Code.
- C. NECA Standard of Installation.
- D. ANSI/NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.

- E. ANSI C80.3 – Electrical Metallic Tubing, Zinc Coated.

1.03 - SUBMITTALS

- A. Submit product data under provisions of Section 013300.

1.04 - REGULATORY REQUIREMENTS

- A. Furnish products listed and classified by Underwriters Laboratories, Inc.
- B. Conform to requirements of ANSI/NFPA 70.

1.05 - PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Section 017839.
- B. Accurately record actual routing of all conduits.

1.06 - FIELD SAMPLES

- A. Provide under provisions of Section 014500.
- B. Provide field sample of conduit two each at 2 feet in length.
- C. Provide field sample of expansion/deflection fitting, two each.

1.07 - DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect, and handle products in accordance with manufacturers' recommendations.
- B. Accept conduit on site. Inspect for damage.
- C. Protect conduit from corrosion and entrance of debris by storing abovegrade. Provide appropriate covering.

1.08 - PROJECT CONDITIONS

- A. Verify all conduit routings by field measurements.
- B. Verify routing and termination locations of conduit prior to rough-in.

- C. Conduit routing is shown on Drawings in approximate locations unless dimensioned. Route as required to complete wiring system. Provide all required sweeps, boxes and fittings.

PART 2 - PRODUCTS

2.01 - RIGID GALVANIZED CONDUIT

- A. Rigid conduit shall be hot dipped, galvanized, or electro-galvanized steel by WHEATLAND, TRIANGLE, REPUBLIC or approved equal.
- B. Associated couplings, connectors and fittings shall be as manufactured by THOMAS & BETTS CORP., O.Z. GEDNEY CO., EFCOR or approved equal. Catalog numbers used below are those of THOMAS & BETTS CORP. based on 3/4-inch size and are considered standards by which equivalents are to be judged.
- C. ERICKSON couplings, Series 676 or approved equal, shall be used where neither length of conduit can be rotated.
- D. Conduit connectors shall be threaded type. Set screw and compression type connections ARE NOT acceptable.
- E. Sealing fitting locknuts shall be Series 142SL.
- F. Steel or malleable iron insulated bullet hub, Series 370-379, complete with sealing "O" ring. DO NOT use "die cast" material.
- G. Entrance ells shall be Series 1491 or approved equal.
- H. Combination coupling shall be Series 531 for connecting rigid galvanized conduit to electrical metallic tubing.

2.02 – PVC CONDUIT

- A. PVC conduit shall be manufactured by WHEATLAND, TRIANGLE REPUBLIC or approved equal.
- B. Description: NEMA TC 2; Schedule 80 PVC.
- C. Fittings and Conduit Bodies: NEMA TC3.

2.03 – ELECTRICAL METALLIC TUBING (EMT)

- A. Electrical metallic tubing shall be WHEATLAND, TRIANGLE, REPUBLIC, or approved equal.
- B. Associated couplings, connectors and fittings shall be as manufactured by THOMAS & BETTS CORP., O.Z. GEDNEY CO., EFCOR, or approved equal. Catalog numbers used below are those of THOMAS & BETTS CORP. based on 3/4-inch size and are considered standards by which equivalents are to be judged.
- C. EMT connectors shall be TC-2125C compression type with threaded locknut. Set screw connectors will not be acceptable.
- D. EMT couplings shall be TK-2125C compression type. Set screw connectors will not be acceptable.

2.04 – METAL CLAD CABLE (MC)

- A. Metal clad cable shall be manufactured by BICCGENERAL or approved equal.
- B. Associated couplings, connectors and fittings shall be as manufactured by THOMAS & BETTS CORP., O.Z. GEDNEY CO., EFCOR or approved equal.
- C. Conductors shall be types THHN and THWN. Ground wire shall be sized as per NEC with green THHN/THWN insulation. All conductors shall be cabled and wrapped in polyester tape. All conductors shall be rated for 600 VAC.
- D. Armor material shall be Aluminum Interlocked Armor.

PART 3 - EXECUTION

3.01 - INSTALLATION

- A. Minimum size of conduits shall be 3/4-inch.
- B. Minimum conduit depth shall be 24" below grade, measured to the top of the conduit on exterior underground installations.
- C. Conduit joints shall be cut square, threaded, reamed smooth, and drawn up tight so conduit ends will butt in couplings, connectors and fittings.
- D. Make bends or offsets with standard ells or field bends with an approved bender.

- E. Run concealed conduits in direct line with long sweep bends or offsets. Run exposed conduits parallel to and at right angles to building lines. Group multiple conduit runs in banks.
- F. Secure conduits to all boxes and cabinets with double locknuts and bushings so system will be electrically continuous from service to all outlets.
- G. Install conduit in accordance with NECA Standard of Installation.
- H. Cap ends of conduits to prevent entrance of water and other foreign material during construction.
- I. Complete all conduit systems before pulling conductors.
- J. Support conduits under provisions of Section 260529.
- K. Provide approved expansion joints or fittings and bonding jumpers where conduits in concrete pass through building expansion joints.
- L. Provide cable supports in conduits rising vertically in accordance with the National Electric Code, Article 300.19.
- M. Provide No. 12 AWG copper pull wires or nylon cord in all empty conduits. Steel wire not acceptable as pull wire.
- N. Install conduit to preserve fire resistance rating of partitions and other elements.
- O. Ground and bond conduit under provisions of Section 260526.
- P. Where neither length of conduit can be rotated, ERICKSON couplings Series 676 shall be used.
- Q. In areas where enclosed and gasketed fixtures and weatherproof devices are specified, where rigid conduit enters a sheet metal enclosure, junction box and outlet box, and not terminated in a threaded hub, a steel, or malleable iron nylon insulated bullet hub, complete with recessed sealing "O" ring, shall be used, Series 370-379. DO NOT use die cast material.
- R. In concrete slabs block up conduit from forms and securely fasten in place. All conduits in slabs shall be installed below concrete slab.
- S. Where conduits running overhead pass through building expansion joints, install flexible liquid tight conduit of same size with sufficient slack to allow conduits on either side of expansion joint to move a minimum of 3-inches in any direction. Provide supports as required on each side of expansion joint, all in accordance with seismic requirements of specific area.

- T. Failure to route conduit through building without interfering with other equipment and construction shall not constitute a reason for an extra charge. Equipment, conduit and fixtures shall fit into available spaces in building and shall not be introduced into building at such times and manner as to cause damage to structure. Equipment requiring servicing shall be readily accessible.
- U. Arrange supports to prevent misalignment during wiring installation.
- V. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
- W. Group related conduits; support using conduit rack. Construct rack using steel channel; provide space on each for 25 percent additional conduits.
- X. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.
- Y. Do not attach conduit to ceiling support wires.
- Z. Arrange conduit to maintain headroom and present neat appearance.
- AA. Route exposed conduit parallel and perpendicular to walls.
- BB. Route conduit installed above accessible ceilings parallel and perpendicular to walls.
- CC. Route conduit in and under slab from point-to-point.
- DD. Do not cross conduits in slab.
- EE. Maintain adequate clearance between conduit and piping.
- FF. Maintain 12-inch clearance between conduit and surfaces with temperatures exceeding 104°F (40°C).
- GG. Bring conduit to shoulder of fittings; fasten securely.
- HH. Use conduit hubs with sealing locknuts to fasten conduit in damp and wet locations.
- II. Install no more than equivalent of three 90-degree bends on interior locations between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use factory elbows for bends in metal conduit larger than 2-inch size.

JJ. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system.

KK. Do not use dissimilar strap or clamp supports. Provide dielectric tape, fittings, straps, and bushings where dissimilar metals are used.

LL. Install duct seal on all conduits entering and exiting all pull boxes, transformer pads, and panelboards.

3.02 - CONDUIT LOCATIONS

A. Route all conduit concealed in walls or above finished ceilings. Provide boxes and conduits concealed in walls for all power and controls.

END OF SECTION 260535

SECTION 260553 – IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 – GENERAL

1.01 - SECTION INCLUDES

- A. Nameplates and labels.
- B. Wire and cable markers.
- C. Conduit markers.

1.02 – REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.

1.03 – SUBMITTALS

- A. Submit under provisions of Section 013300.
- B. Product Data: Provide catalog data for nameplates, labels and markers.
- C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by Underwriters Laboratories, Inc. Include instructions for storage, handling, protection, examination, preparation and installation of product.

1.04 - REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

PART 2 – PRODUCTS

2.01 - NAMEPLATES AND LABELS

- A. Nameplates: Engraved three-layer laminated plastic, white letters on black background.
- B. Locations:

1. Distribution panelboards.
2. Disconnect Switches.
3. All control and pilot light devices.
4. Transfer switches.

C. Letter Size:

1. Use 1/4 inch (6 mm) letters for identifying equipment and loads.

D. Labels: Embossed adhesive tape, with 3/16 inch (5 mm) white letters on black background. Use for identifying existing equipment only for distribution panels, switchboards, disconnect switches and individual devices in them.

2.02 - WIRE MARKERS

A. Manufacturers:

1. 3M ELECTRICAL SPECIALTY DIV., Product Scotch Code.
2. THOMAS & BETTS CORP., Product E-Z Code.
3. Substitutions shall be permitted only after receiving written approval from the Engineer.

B. Description: Epoxy film tape type wire markers.

C. Locations: Each conductor at panelboards, auxiliary gutters, pull boxes, outlet and junction boxes, circuit breakers and each load connection.

D. Legend:

1. Power and Lighting Circuits: Branch circuit or feeder number indicated on drawings.
2. Control Circuits: Control wire number indicated on interconnection diagrams on drawings.

2.03 - CONDUIT MARKERS

A. Manufacturers:

1. THOMAS & BETTS CORP.

- 2. Substitutions shall be permitted only after receiving written approval from the Engineer.
- B. Description: Self-sticking vinyl; black letters on orange background.
- C. Location: Furnish markers for each conduit longer than 6 feet (1.8 m).
- D. Spacing: 20 feet (6 m) on center.

2.04 - UNDERGROUND WARNING TAPE

- A. Manufacturers:
 - 1. THOMAS & BETTS CORP., Model NA-0708.
 - 2. Substitutions shall be permitted only after receiving written approval from the Engineer.
- B. Description: 6 inch (150 mm) wide plastic tape, detectable type, colored yellow with suitable warning legend describing buried electrical lines.

PART 3 – EXECUTION

3.01 - PREPARATION

- A. Degrease and clean surfaces to receive nameplates and labels.

3.02 - APPLICATION

- A. Install nameplate and label parallel to equipment lines.
- B. Secure nameplate to equipment front using screws, rivets or adhesive.
- C. Secure nameplate to inside surface of door on panelboard that is recessed in finished locations.
- D. Apply conduit markers at 20-foot (6 m) intervals.
- E. Identify underground conduits using underground warning tape. Install one tape per trench at 3 inches (75 mm) below finished grade.

3.03 - ELECTRICAL EQUIPMENT IDENTIFICATION

- A. The Contractor shall identify all existing circuits in existing distribution panels, switchboards and disconnect switches to remain.

- B. Label all circuits identifying the load served including all individual circuit breakers.
- C. Label all new circuit breakers and switches used for new feeder and branch circuits.
- D. Contractor shall furnish a minimum of 5 custom engrave three-layer laminated plastic labels with up to 20 words per label as directed by the engineer/owner in addition to the required labels for all pilot devices, switches, controls and timers.

END OF SECTION 260553

SECTION 262726 - WIRING DEVICES

PART 1 - GENERAL

1.01 - SECTION INCLUDES

- A. Switches, receptacles, device plates and other wiring devices as indicated on drawings.

1.02 - RELATED SECTIONS

- A. ANSI/NFPA 70 – National Electric Code.
- B. NEMA WDI – General Purpose Wiring Devices.

1.03 - SUBMITTALS

- A. Provide manufacturer's catalog information showing dimensions, colors and configuration.

1.04 - REGULATORY REQUIREMENTS

- A. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

PART 2 - PRODUCTS

2.01 – SWITCHES, RECEPTACLES AND PLUGS

- A. For use in unfinished areas: COLORS TO BE SELECTED BY OWNER.

DEVICES	MANUFACTURER	CATALOG NO.
1. Duplex Receptacles	Bryant	5352 Series
2. Ground Fault Receptacle	Bryant	GF53 Series
3. SPST Switches	Bryant	4901 Series
5. Three Way Switch	Bryant	4903 Series

2.02 - DEVICE COVERPLATES

- A. Stainless Steel switch and receptacle plates to be manufactured by BRYANT Model S601, S602, S601D, S602D, S603D, S671, S672, and S673. Faceplates for single pole and three way dimmers to be manufactured by LUTRON, Model No. CW-1, CW-2, CW-3. Multigang faceplates for dimmer controls to be manufactured by LIGHTOLIER, Model NFB3L for three (3)

large wall box dimmers with no fins broken. COLOR(S) AND FINISH TYPE (S) TO BE SELECTED BY OWNER.

2.03 - EMERGENCY KILL MUSHROOM SWITCH

- A. Acceptable Manufacturers: SQUARE D Model No.: 9001KR9P1RH1321 or approved equal.
- B. Operator: 2-POSITION MAINTAINED PULL-MAINTAINED PUSH ILLUMINATED FLASHING mushroom head pushbutton. Switch head shall only be flashing in the “pushed” position.
- C. Mushroom Head: 2-1/4-inch diameter head.
- D. Nameplate: Large 2.92-inch square, Red nameplate with engraved logo “Emergency Stop”, unless noted otherwise on drawings.
- E. Enclosure: Heavy duty, one opening, weatherproof, sheet steel enclosure.

2.04 – MANUAL MOTOR RATED THERMAL SWITCH

- A. Acceptable Manufacturers: SQUARE D, Class 2510 or approved equal.
- B. Contractor shall coordinate voltage, phase and current rating with equipment.

PART 3 - EXECUTION

3.01 - INSTALLATION

- A. Mounting:
 - 1. Mount all switches 46-inches above finished floor to center line of switch unless noted otherwise.
 - 2. Mount all receptacles 18-inches above finished floor to center line of receptacle unless noted otherwise. Coordinate installation with Architect/Engineer in field if mounting height conflicts with installation of baseboards and/or other HVAC equipment.
 - 3. Install switches with OFF position down.

- B. Polarity: Properly wire all receptacles so that the hot wire, the neutral wire and the ground wire connect to the proper terminal on all receptacles.
- C. Grounding: Install all receptacles in boxes specified under Section 260533 and install a No. 12 green ground wire from device grounding terminal to the outlet box in accordance with the National Electric Code.
- D. Install device plates on switch, receptacle and blank outlets in full contact with wall surface.

3.02 - FIELD QUALITY CONTROL

- A. Inspect each wiring device for defects.
- B. Operate each wall switch with circuit energized and verify proper operation.
- C. Verify that each receptacle device is energized.
- D. Test each receptacle device for proper polarity.
- E. Test each GFCI receptacle device for proper operation.

END OF SECTION 262726

SECTION 262816 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.01 - SECTION INCLUDES

- A. Enclosed Circuit Breakers.

1.02 - REFERENCES

- A. NEMA AB1 - Molded Case Circuit Breakers.

1.03 - SUBMITTALS

- A. Submit product data.
- B. Include outlet drawings with dimensions and equipment ratings for voltage, capacity, horsepower, and short circuit current ratings.

1.04 - RELATED SECTION

- A. Section 260553 - Identification for Electrical Systems.

1.05 – COORDINATION

- A. Coordinate layout and installation of switches, circuit breakers, and components with equipment served and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

PART 2 - PRODUCTS

2.01 - MOLDED CASE CIRCUIT BREAKERS

- A. Install molded case circuit breakers for Main Circuit Breaker, Generator Circuit Breaker, and Panel Circuit Breakers.
- B. Molded Case Circuit Breaker:
 - 1. Manufacturer: SIEMENS or “approved equal”
 - a. 35Amp, 30Amp, 3 Pole Type HLD6,,

- b. 15Amp,20Amp, 1 pole TYPE HLD^
- 2. AIC Rating: 65,000.
- 3. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits.
- 4. Electronic trip circuit breakers with rms sensing, for circuit breaker sizes 250A and larger; field-replaceable rating plug or field-replaceable electronic trip; and the following field-adjustable settings:
 - a. Instantaneous trip.
 - b. Long- and short-time pickup levels.
 - c. Long- and short-time time adjustments
- 5. Molded-Case Circuit-Breaker (MCCB) Features and Accessories:
 - a. Standard frame sizes, trip ratings, and number of poles.
 - b. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
 - c. Handle Padlocking Device: Fixed attachment, for locking circuit-breaker handle in off position.
 - d. Handle Clamp: Loose attachment, for holding circuit-breaker handle in on position.

C. Enclosure

- 1. Manufacturer: SIEMENS
- 2. Rating: NEMA 3R.
- 3. External Throw.
- 4. Lockable Handle.
- 5. Suitable for Service Entrance Equipment (where applicable).

PART 3 - EXECUTION

3.01 - INSTALLATION REQUIREMENTS

- A. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.
- B. Temporary Lifting Provisions: Removed temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.
- C. Provide switches/enclosed circuit breakers at locations as indicated on drawings.
- D. Refer to disconnect switch schedule on drawings for ampacity ratings, fuse sizes, number of poles and enclosure ratings.
- E. Install fuses in fusible devices.
- F. Install engraved nameplates on each switch and enclosed circuit breaker identifying the following:
 - 1. Switch designated.
 - 2. Load served.
 - 3. Power origination.

3.02 - ADJUSTING

- A. Adjust moving parts and operable components to function smoothly and lubricate as recommended by manufacturer.
- B. Set field-adjustable circuit breaker trip ranges.

END OF SECTION 262816

SECTION 267174 – TEMPORARY ELECTRICAL SERVICE AND CONTROLS

PART 1 - GENERAL

1.01 - SECTION INCLUDES

- A. Temporary generators for use during construction.

1.02 - REFERENCES

- A. ANSI/NFPA 70 - National Electric Code.

1.03 - SUBMITTALS

- A. Submit under provisions of Section 013300.
- B. Shop Drawings: Indicate locations where temporary electric service will be located and routed.

1.04 - REGULATORY REQUIREMENTS

- A. Provide temporary power in accordance with National Electric Code.
- B. Obtain required permits from authorities.
- C. Notify affected utility companies before starting work and comply with their requirements.
- D. Do not close or obstruct egress width to exits.
- E. Do not turn off electric equipment without authorization from Owner and Engineer. Provide 72 hours advance notification.

1.05 - SCHEDULING

- A. Provide temporary electric generator before removing or temporarily disabling existing diesel generator.

PART 2 - PRODUCTS

2.01 - TEMPORARY GENERATOR

- A. Minimum of one (1) Temporary generator shall be available during electrical shutdown that will be more than four (4) hours in duration.
- B. Temporary generator shall be installed and maintained per NEC, OSHA, MA. State Uniform Building Code and local code requirements.
- C. One (1) temporary generator shall be a minimum of 35KW @ 120/208 Volt 3Ø, 4 wire.
- D. All existing equipment shall be protected against damage caused by the installation, operation and removal of the temporary generator service. Any equipment or items damaged shall be replaced at no cost to the Owner.
- E. Provide portable sound-attenuated generator system for temporary electric service.
- F. Provide all necessary wire, cables and conduit for connection between portable generator and existing critical equipment deemed necessary by the owner.
- G. Provide all necessary fuel for operation. Generator shall be diesel powered.
- H. Provide and install a lockable fence enclosure to protect and secure generator from vandalism and theft.
- I. Upon completion of the power shutdown, remove all temporary electric light and power work and restore all affected finishes, connections, and site work.

2.02 – MINIMUM SYSTEM REQUIREMENTS

- A. The temporary engine generator shall start and provide continuous power to all of the existing critical loads as identified by the owner and loads required for construction purposes with 100 percent block loading at the time of transfer.
- B. The genset shall be trailer mounted with an integral sub base tank:
 - 1. The 35KW Genset shall be provided with a minimum of a 25 gallon diesel fuel tank.
- C. The genset to be provided with an electronic governor.
- D. The fuel storage tank shall utilize double wall sub base containment.

- E. Strobe light to indicate low fuel level alarm
- F. Provide portable sound-attenuated generator system for temporary electric service. Sound level must not exceed 65 dBA at 50'.
- G. 110 VAC receptacle for use at low voltages
- H. Easy voltage selection: 120/240V, 120/208V, 277/480V
- I. Trailer shall be provided with out-riggers to provide security and remove load from trailer tires when genset is in stationary position.
- J. AC voltage and frequency meters, digital display panel, panel backlighting, Run-off-auto switch, self diagnostics, idle mode control, and voltmeter/ammeter phase selector switch.
- K. Overcurrent sensing, Voltage adjustment potentiometer.
- L. Provide all necessary wire, cables and conduit for connection between portable generator and all electrical equipment.
- M. Provide a full tank of fuel with delivery of unit. Generator shall be diesel powered.

PART 3 - EXECUTION

3.01 - EXAMINATION

- A. Verify existing system voltage characteristics and match to existing system voltage characteristics.
- B. Verify that the temporary service is sized to accommodate all loads.
- C. Determine locations and routings for temporary electric wires, cables and conduits with Engineer and Owner.

3.02 - TEMPORARY POWER

- A. Temporary wiring and power shall be installed so as not to be a hazard and shall be protected from damage. Separate circuits shall be provided for light and power. Overcurrent protective devices and switches shall be provided. All equipment, tools, metal cabinets and boxes shall be grounded.

- B. Disable existing power only to make final connections or when new service is to be installed.

- D. Temporary wires, cables and conduits shall be protected from damage and accessibility by unauthorized persons.

- E. Contractor shall pay for all fuel and maintenance of unit during course of use.

END OF SECTION 267174

HADLEY BUILDING RENOVATIONS TO OEFM OFFICE

DRAWING SHEETS

GENERAL:

G-01 COVER SHEET

ARCHITECTURAL:

A-01 EXISTING CONDITIONS
A-02 OFFICE #6 & #7 FLOOR PLAN

MECHANICAL:

**M-01 MECHANICAL SPECIFICATIONS
LEGEND, ABBREVIATIONS AND
GENERAL NOTES**
**M-02 MECHANICAL SCHEDULES AND
DETAILS**
**M-03 MECHANICAL DEMOLITION
PLAN**
**M-04 MECHANICAL NEW WORK
PLAN**

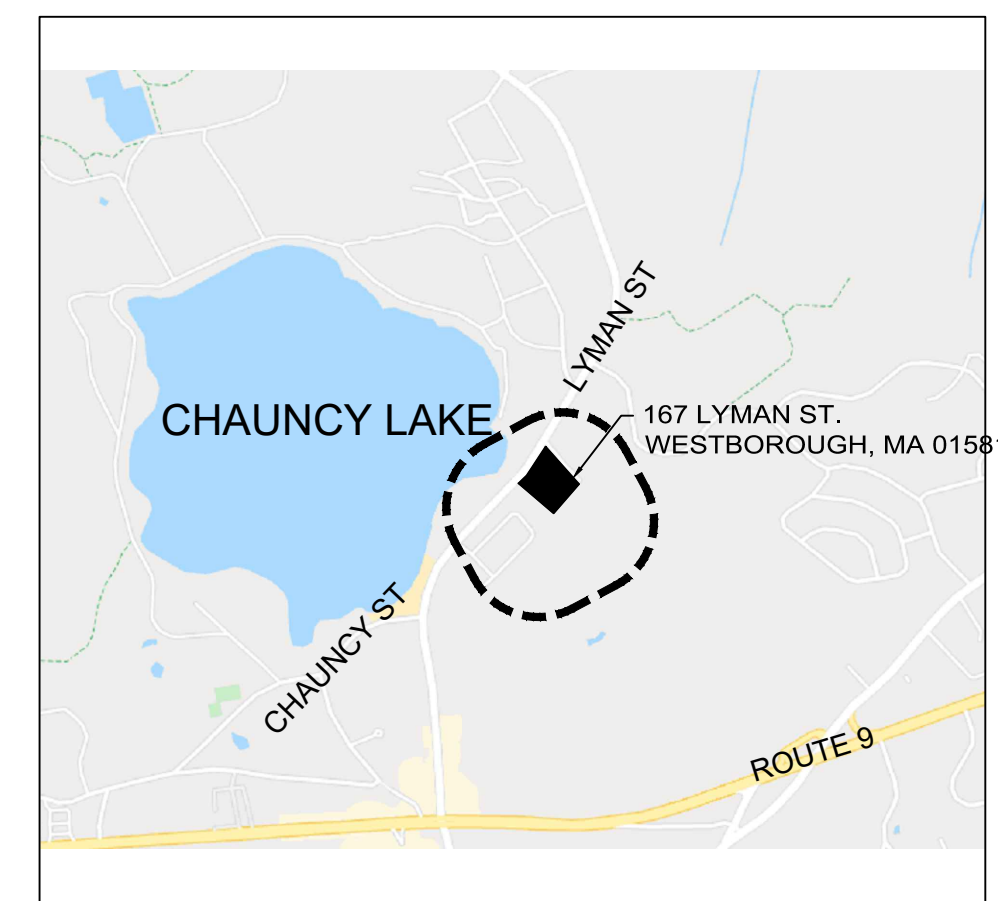
ELECTRICAL:

**E-01 ELECTRICAL GENERAL NOTES,
LEGEND AND ABBREVIATIONS**
E-02 ELECTRICAL POWER PLAN
**E-03 ELECTRICAL RISER DIAGRAM
AND PANEL SCHEDULES**

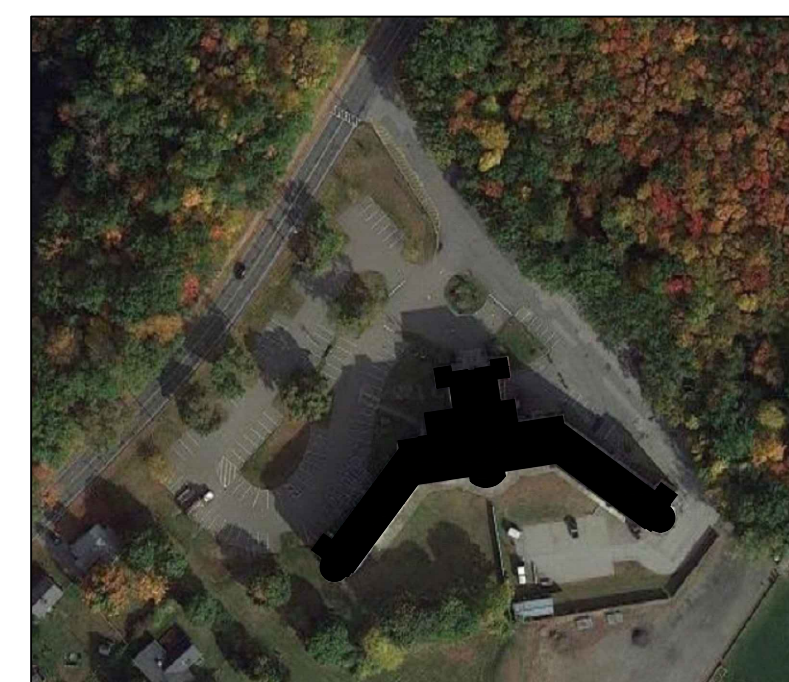
GENERAL NOTES

- G0 THE DEPARTMENT OF MENTAL HEALTH (DMH) SHALL BE ADDED AS ADDITIONAL INSURED TO THE CONTRACTOR'S COMMERCIAL GENERAL LIABILITY, AUTOMOBILE LIABILITY, AND UMBRELLA POLICIES FOR THIS PROJECT. ALL OF THE CONTRACTOR'S INSURERS SHALL PROVIDE A WAIVER OF SUBROGATION IN FAVOR OF THE DMH.
- G1 CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND COORDINATING ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. IN CASE OF CONFLICT, THE DESIGNER SHALL BE NOTIFIED AND SHALL RESOLVE THE CONFLICT. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS.
- G2 IN ANY CASE OF CONFLICT BETWEEN OR WITHIN THE DRAWINGS AND THE PROJECT SPECIFICATIONS OR WITHIN THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN AT THE SOLE DISCRETION OF THE DESIGNER.
- G3 THE CONTRACTOR SHALL MAKE NO DEVIATION FROM DESIGN DRAWINGS WITHOUT PRIOR REVIEW BY THE DESIGNER.
- G4 WORK NOT INDICATED ON A PART OF THE DRAWINGS BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES SHALL BE REPEATED. ANY CONDITION FOUND NOT DETAILED SHALL BE CONSTRUCTED IN A MANNER SIMILAR TO THAT OF THE TYPICAL DETAILS.
- G5 ALL WORK SHALL COMPLY WITH APPLICABLE CODES AND LOCAL LAWS AND REGULATIONS.
- G6 GENERAL CONTRACTOR SHALL COORDINATE LOCATION OF OPENINGS, PITS, BOXES, SUMPS, TRENCHES, SLEEVES, DEPRESSIONS, GROOVES, AND CHAMFERS, WITH MECHANICAL, ELECTRICAL, AND PLUMBING TRADES.
- G7 CONTRACTOR SHALL NOT SCALE DRAWINGS. CONTRACTOR SHALL REQUEST ALL DIMENSIONS OR INFORMATION REQUIRED TO PERFORM THE WORK FROM THE DESIGNER. WORK COMPLETED BY THE CONTRACTOR WITHOUT DIMENSIONS OR INFORMATION SHALL BE DONE AT HIS OWN RISK AND SHALL BE REMOVED AND REINSTALLED TO THE SPECIFICATIONS OF THE DESIGNER AT NO ADDITIONAL COST TO THE OWNER.
- G8 MEANS AND METHODS OF CONSTRUCTION AS WELL AS COMPLIANCE WITH OSHA AND OTHER SAFETY LAWS AND REGULATIONS IS EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR, HIS/HER SUBCONTRACTOR(S), SUPPLIERS, CONSULTANTS, AND SERVANTS.
- G9 FOR ALL ITEMS THAT ARE TO BE REUSED AND/OR REINSTALLED AS PART OF THE WORK:
 - ALL ITEMS THAT ARE TO REMAIN ARE TO BE PROTECTED FROM DAMAGE. IF ANY DAMAGE OCCURS, THE CONTRACTOR SHALL REPAIR THE ITEM SO IT IS IN A LIKE NEW CONDITION OR REPLACE IT WITH A NEW ITEM THAT FUNCTIONS THE SAME OR BETTER THAN THE ORIGINAL ITEM.
 - ALL ITEMS THAT ARE TO BE TEMPORARILY REMOVED & REINSTALLED ARE TO BE CAREFULLY REMOVED AND MOVED TO A PROTECTED AREA ON SITE OR TO AN OFF-SITE FACILITY. THE ITEMS TO BE CLEANED AND PREPARED FOR REINSTALLATION. ALL FITTINGS AND CONNECTION POINTS ARE TO BE INSPECTED AND REPAIRED. PROVIDE NEW FASTENERS AND CAREFULLY TRANSPORT THE ITEM BACK TO ITS ORIGINAL LOCATION AND CAREFULLY REINSTALL. IF ANY DAMAGE OCCURS, THE CONTRACTOR SHALL REPAIR THE ITEM SO IT IS IN A LIKE NEW CONDITION OR REPLACE IT WITH A NEW ITEM THAT FUNCTIONS THE SAME OR BETTER THAN THE ORIGINAL ITEM.

LOCATOR MAP



SITE PLAN



PROJECT SUMMARY

GENERAL NOTES:

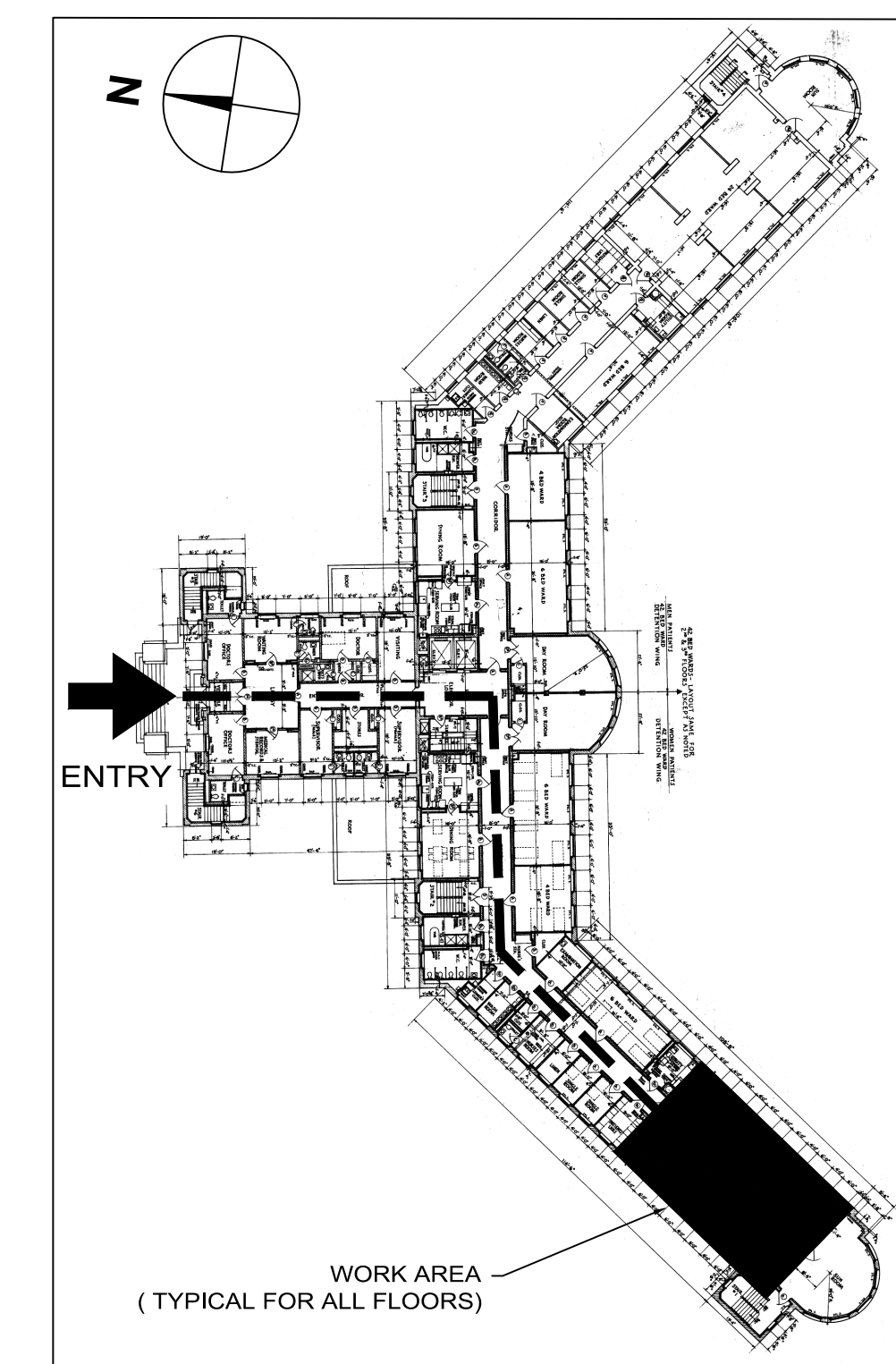
THE PROJECT ENTAILS THE RENOVATION OF THE OFFICE OF ENGINEERING AND FACILITIES MANAGEMENT (OEFM) OFFICE SPACE AT THE HADLEY BUILDING. IT INCLUDES REMOVING THE WALL PANELS OF TWO OFFICES (OF#6 AND OF#7) AND CLOSING THEM WITH DRYWALL PARTITIONS AND DOORS, PLUS THE INSTALLATION OF DUCTLESS MULTI-ZONE AIR CONDITIONING AND HEATING SYSTEMS AS INDICATED ON THE MECHANICAL AND ELECTRICAL DRAWINGS.

THE PROJECT AREA IS APPROXIMATELY 2200 S.F. WITHIN THE APPROXIMATELY 64,107 S.F. FACILITY. THE USE GROUP OF THE BUILDING IS B. THE USE GROUP OF THE BUILDING AND THE RENOVATED SPACE WILL REMAIN UNCHANGED.

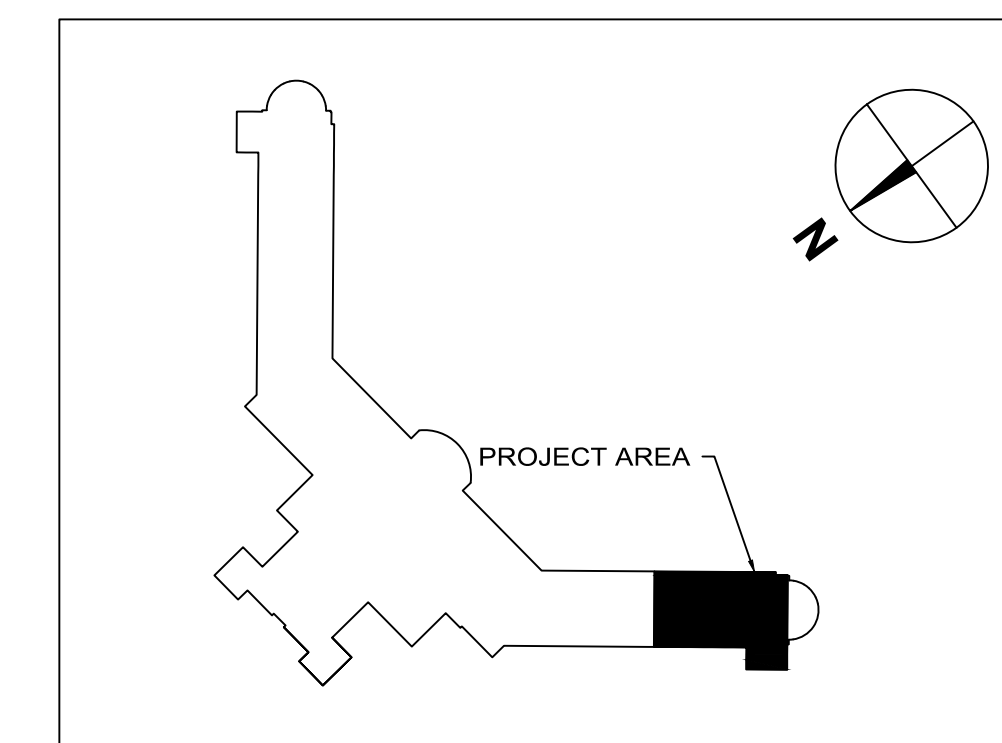
THIS IS A LEVEL 2 ALTERATION ACCORDING TO 2015 IBC, SECTION 504. THE PROJECT DOES NOT MODIFY EGRESS ACCESS, PATH OF TRAVEL, SIZE OR NATURE OF CARE SUITS NOR IS INTENDED TO MODIFY THE NATURE OF ANY SMOKE OR FIRE DETECTION OR ALARM SYSTEMS. THE WORK DOES NOT INVOLVE ANY STRUCTURAL, MECHANICAL, OR PLUMBING CHANGE. ALL NEWLY INSTALLED ELECTRICAL EQUIPMENT AND WIRING RELATING WORK WILL COMPLY WITH NFPA 70.

THIS PROJECT SHALL CONFORM WITH THE REQUIREMENTS OF 2015 IBC, CHAPTER 4, PRESCRIPTIVE COMPLIANCE METHOD, SECTION 403 ALTERATION; ALTERATIONS SHALL BE SUCH THAT THE EXISTING BUILDING IS NO LESS CONFORMING TO THE PROVISIONS OF THE INTERNATIONAL BUILDING CODE THAN PRIOR TO ALTERATIONS. IMPROVEMENTS SHALL CONFORM WITH THE REQUIREMENTS OF THE MASSACHUSETTS STATE BUILDING CODE, 780 CMR, AND THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS, 521 CMR.

BUILDING ACCESS, LIMIT OF WORK



KEY PLAN



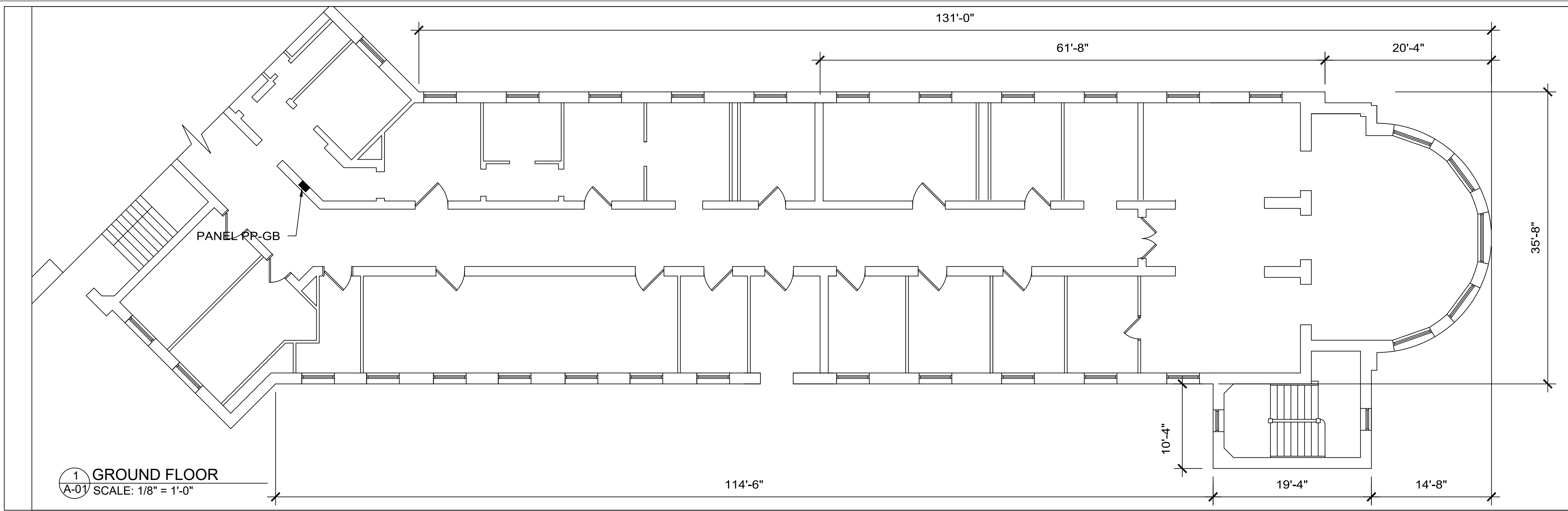
No.	DESCRIPTION	DATE

RENOVATIONS TO OEFM OFFICE

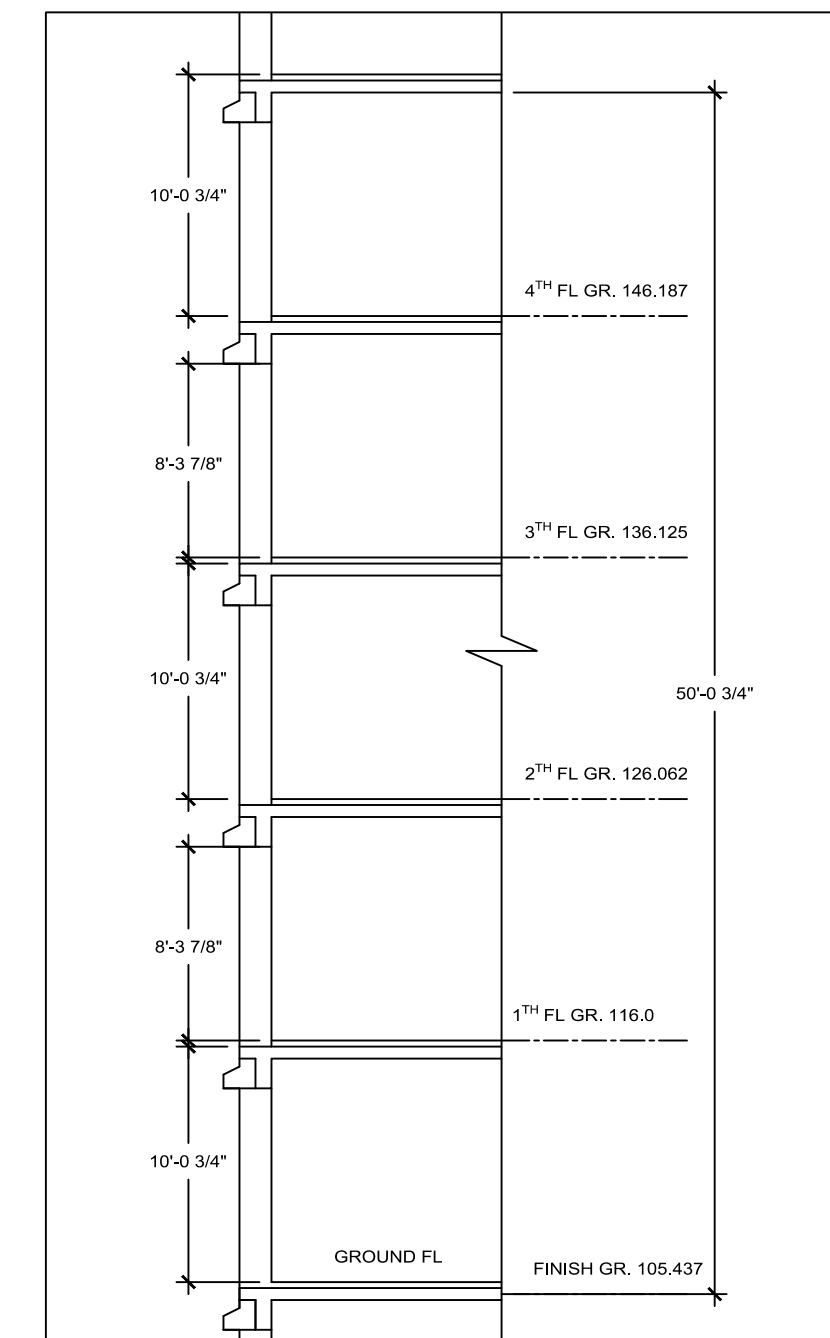
HADLEY BUILDING
167 LYMAN STREET
WESTBOROUGH, MA 01581

COVER SHEET

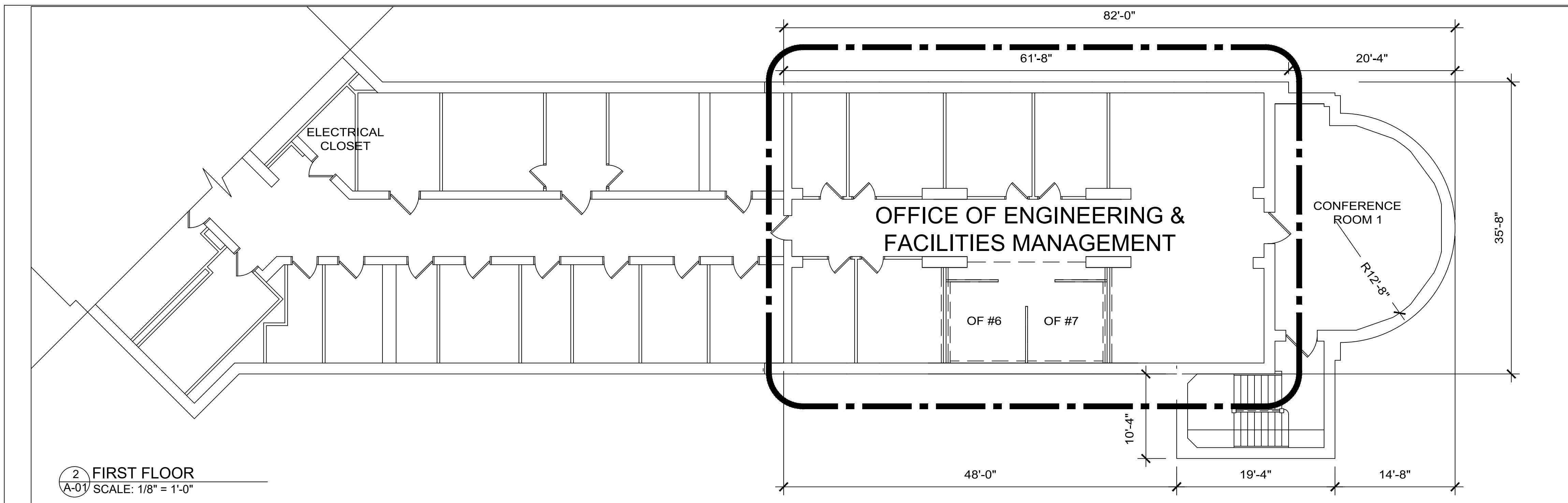
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SCALE:	N.T.S.
BY:	WST
SHEET:	G-01



1 GROUND FLOOR
A-01 SCALE: 1/8" = 1'-0"



6 SCHEMATIC BUILDING SECTION
A-01 SCALE: 1/8" = 1'-0"



2 FIRST FLOOR
A-01 SCALE: 1/8" = 1'-0"

No.	DESCRIPTION	DATE

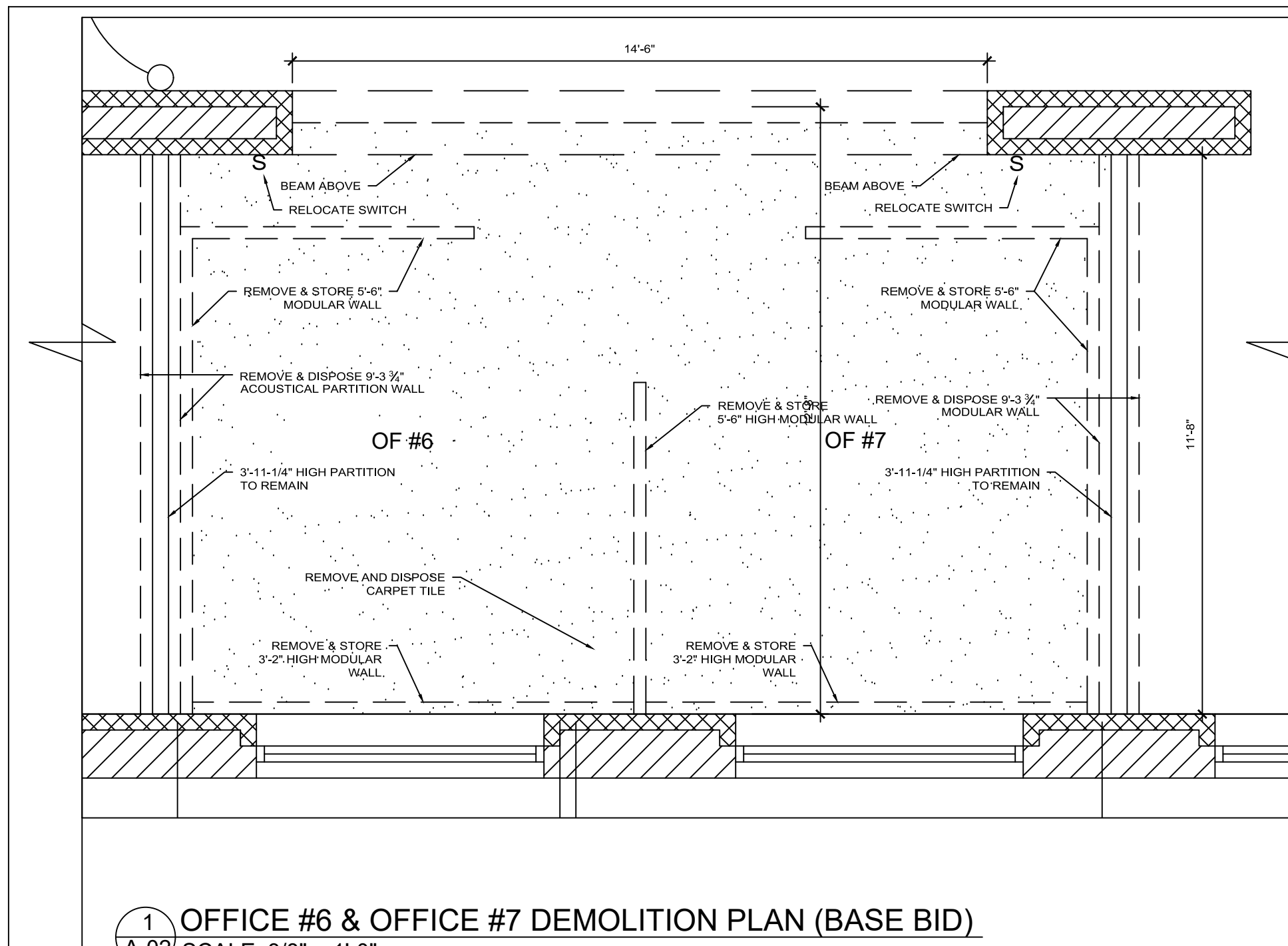
RENOVATIONS TO OEFM OFFICE

HADLEY BUILDING
167 LYMAN STREET
WESTBOROUGH, MA 01581

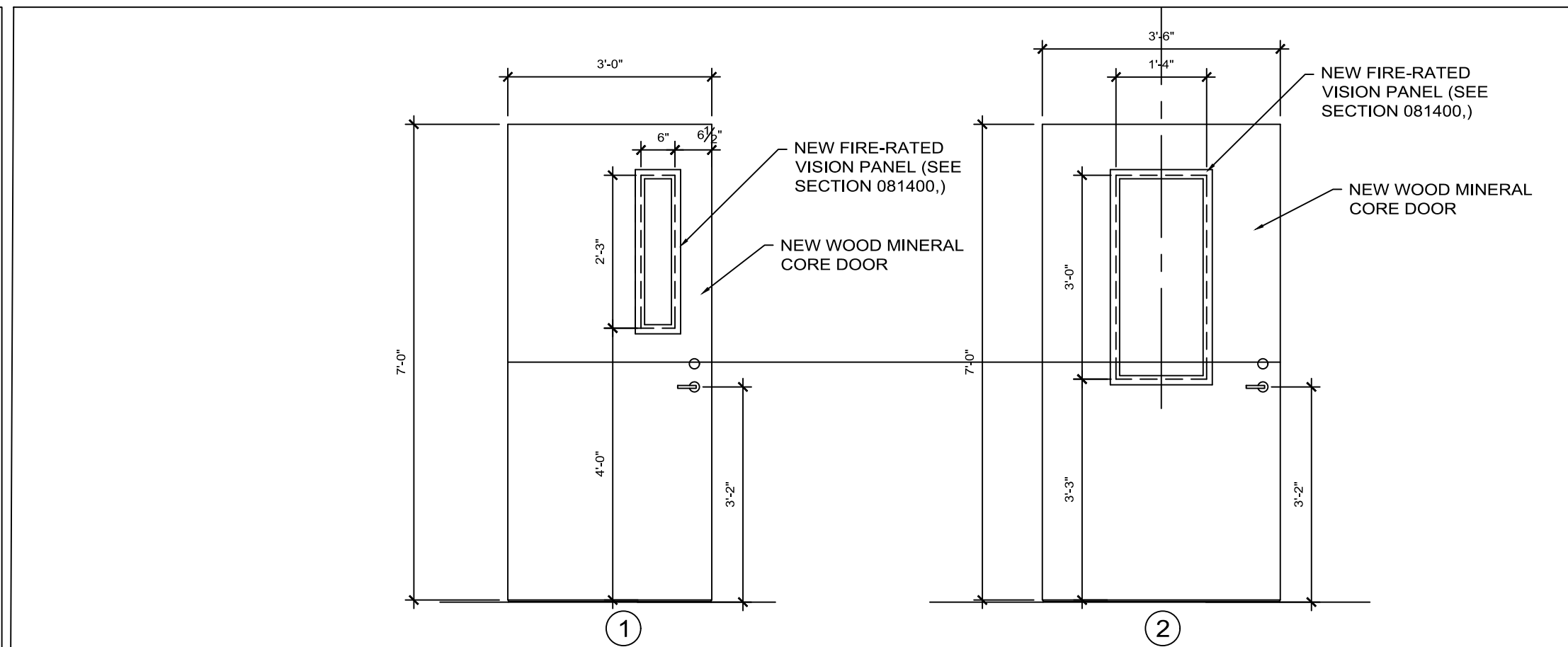
EXISTING
CONDITIONS

DATE: 12/20/22
SCALE: 1/8"=1'-0"
BY: WST
SHEET:

A-01



1 OFFICE #6 & OFFICE #7 DEMOLITION PLAN (BASE BID)
A-02 SCALE: 3/8" = 1'-0"



DOOR SCHEDULE		
TYPE	DESCRIPTION	REMARK
1	DOOR SYSTEM 36X84 FRAME OPENING DOOR ASSEMBLY INCLUDES: SOLID CORE-20 MIN. FIRE RATED- WOOD DOOR, MAPLE CLEAR FINISH, 5 KNUCKLE HINGE, 6" X 27" VISION PANEL (DIAMOND WIRE SAFETY GLASS). NEW FRAME ASSEMBLY INCLUDES: 14 GA. WELDED FRAME, 5-7/8 THROAT, 7-GA REINFORCEMENT, AUXILIARY DOOR PREP, SECURE STRIKE.	DOORS PROVIDED BY CONTRACTOR. PAINT PRE-PRIMED FRAME. VERIFY ALL DIMENSIONS IN THE FIELD.
2	DOOR SYSTEM 42X84 FRAME OPENING DOOR ASSEMBLY INCLUDES: SOLID CORE-20 MIN. FIRE RATED- WOOD DOOR, MAPLE CLEAR FINISH, 5 KNUCKLE HINGE, 18" X 36" VISION PANEL (DIAMOND WIRE SAFETY GLASS). NEW FRAME ASSEMBLY INCLUDES: 14 GA. WELDED FRAME, 5-7/8 THROAT, 7-GA REINFORCEMENT, AUXILIARY DOOR PREP, SECURE STRIKE.	DOORS PROVIDED BY CONTRACTOR. PAINT PRE-PRIMED FRAME. VERIFY ALL DIMENSIONS IN THE FIELD.

7 OFFICE #6 & OFFICE #7 FLOOR PLAN (BASE BID)
A-02 SCALE: 3/8" = 1'-0"

FINISHES:

GDB PARTITIONS

- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
- ALLOW A 1/2" GAP ALONG ALL WALL PERIMETER EDGES AND COMPLETELY SEAL THIS GAP WITH ACOUSTICAL SEALANT.
- USE A SEALANT SUCH AS GREEN GLUE SEALNT AND APPLY PER AST C919
- LIMIT WALL PENETRATIONS WHEN POSSIBLE
- MOLD AN ACOUSTICAL PUTTY AROUND OUTLETS BOXES TO PREVENT SOUND FLANKING

GYPSUM WALLS

- ONE COAT PROMAR 200 ZERO VOC PRIMER
- TWO COATS PROMAR 200 ZERO VOC INTERIOR LATEX EG-SHEL

CEILINGS

- ONE COAT PROMAR 200 ZERO VOC PRIMER
- TWO COATS PROMAR 200 ZERO VOC INTERIOR LATEX FLAT

CARPET TILE FLOORING

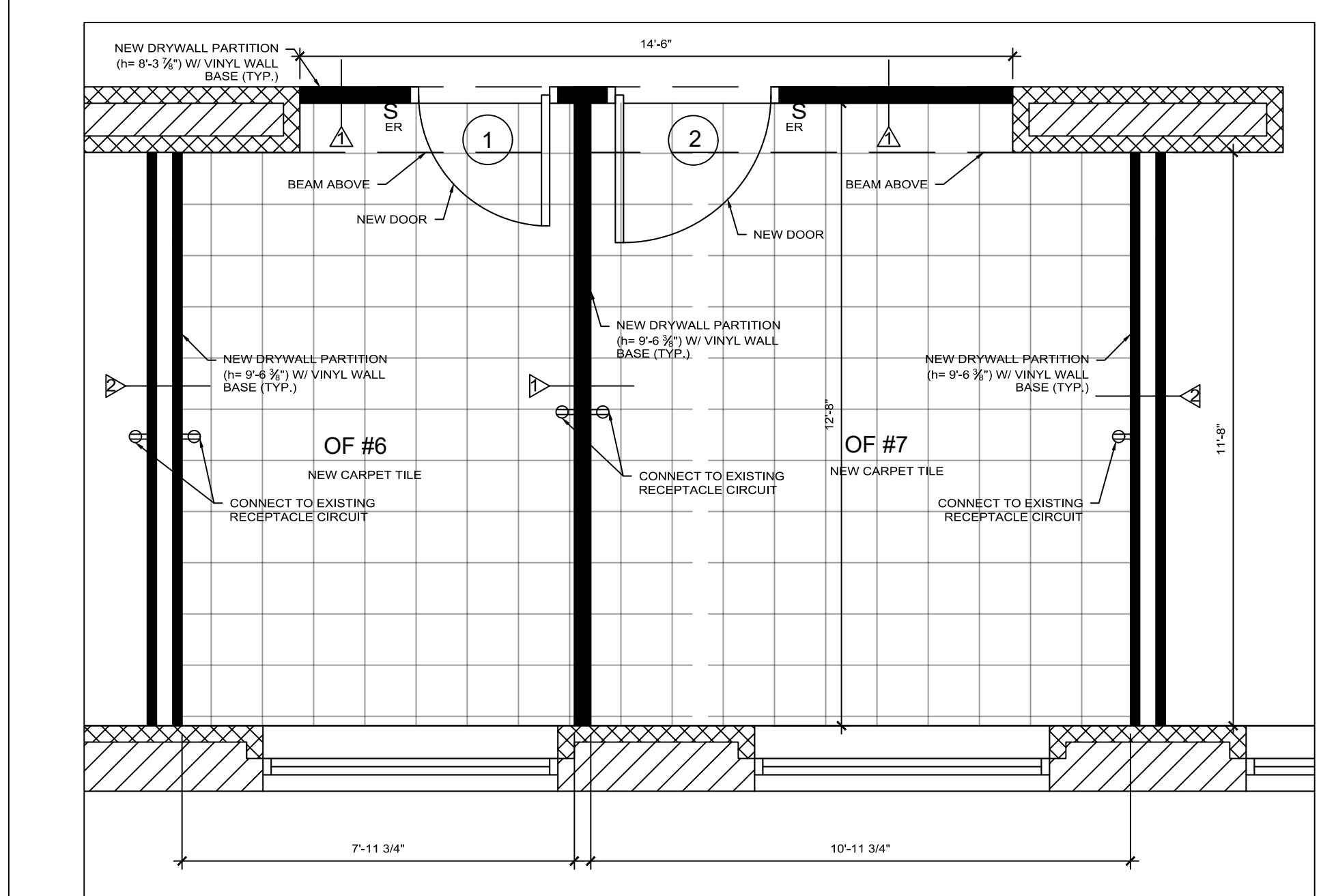
- FLAMMABILITY CLASS B1 COMMERCIAL GRADE CARPET TILE
- 2'X2'- 15 YEAR LIMITED WARRANTY

DOORS

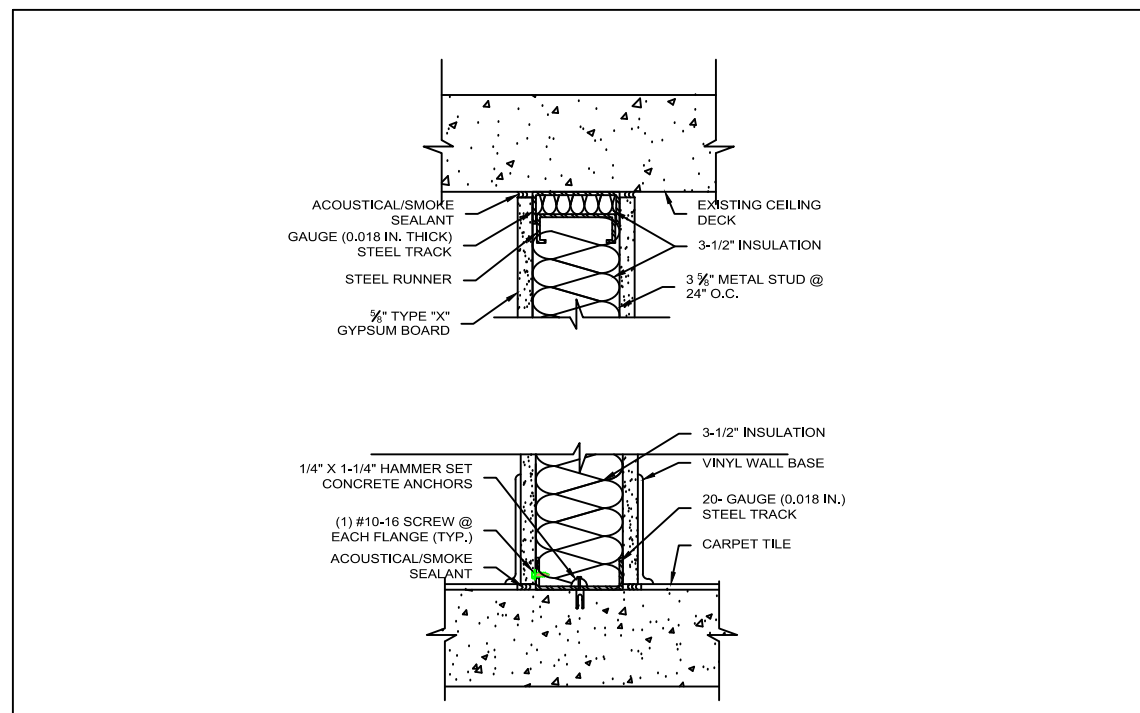
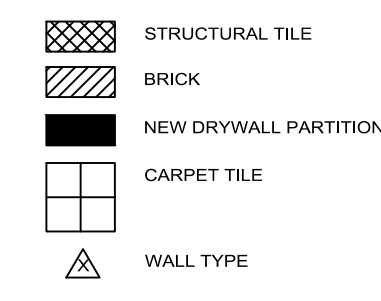
- SPECIFICATIONS: 5 PLY CONSTRUCTION, MEETS OR EXCEEDS INDUSTRY STANDARDS OF WDMA I.S.1
- THICKNESS: 1-3/4" ONLY
- MAXIMUM SIZES: WIDTH 4'-0"; LENGTH 8'-0"
- CORE: 28-30LB. PARTICLEBOARD, ANSI A208.1 GRADE LD-1
- STILES: MATCHING HARDWOOD; WIDTH = 1" NOMINAL, 1/8" MINIMUM AFTER PREFIT SIZE
- UNDERCUT: 3/4" STANDARD
- MACHINING: TO SPECIFICATION
- LITES: DIAMOND WIRE SAFETY GLASS
- ACOUSTICAL RATING: 32 STC OPERABLE
- FIRE RATING: 20-MINUTE FIRE LABEL
- FINISH: PRE-FINISH CLEAR RED OAK

DOOR HARDWARE

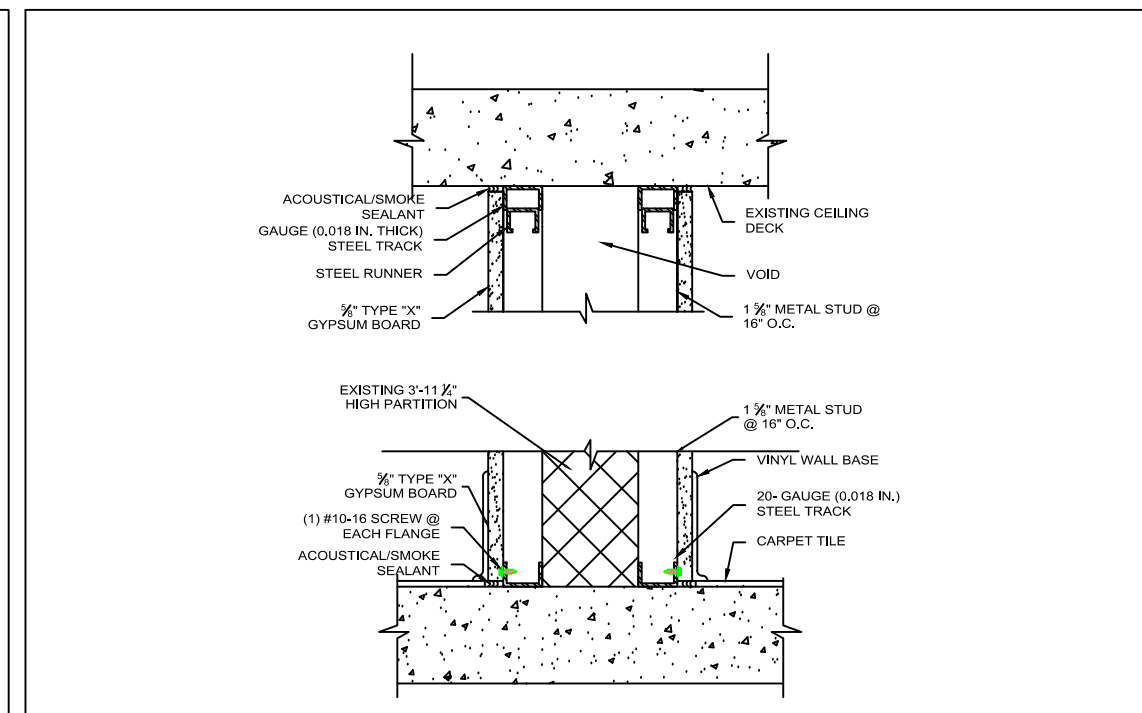
- COMMERCIAL GRADE 1 MORTISE ONE SIDE KEYED 1-1/2" BEST CYLINDER TO ACCEPT DMH's BEST INTERCHANGEABLE KEY WAY.
- ENTRY CLASSROOM DOOR 07 LEVER SET, A ROSETTE, BALL BEARING HINGES, SMOKE/SOUND SEAL, AND WALL STOP, HOLLOW METAL (KD) PRE-PRIMED FRAMES.



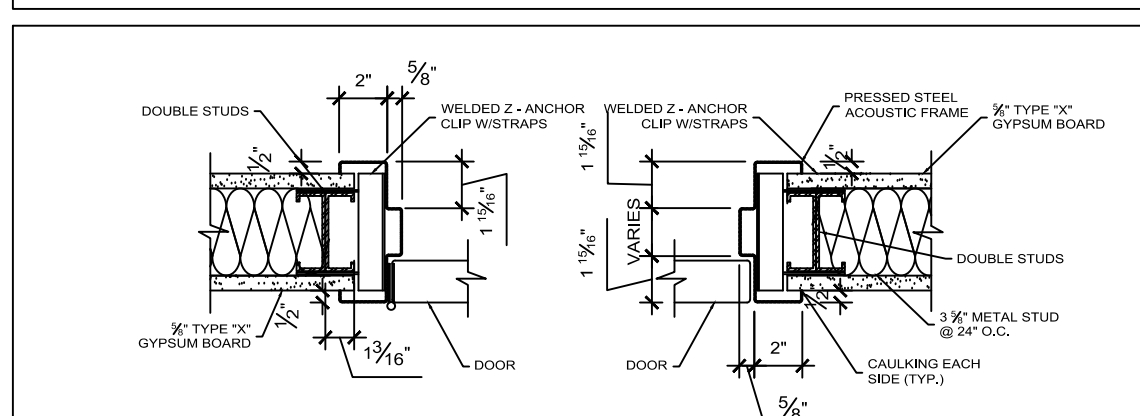
2 OFFICE #6 & OFFICE #7 FLOOR PLAN (BASE BID)
A-02 SCALE: 3/8" = 1'-0"



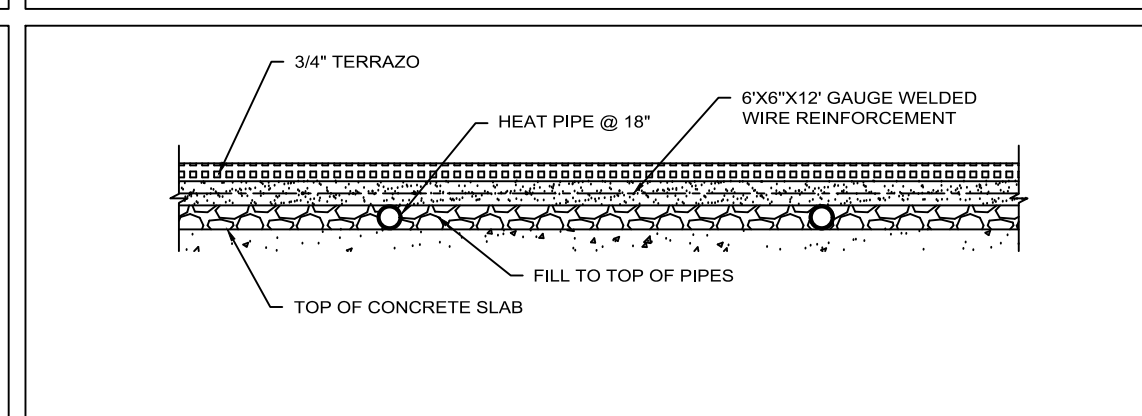
3 WALL TYPE 1 DETAIL
A-02 SCALE: 1 1/2" = 1'-0"



4 WALL TYPE 2 DETAIL
A-02 SCALE: 1 1/2" = 1'-0"



5 JAMB DETAIL
A-02 SCALE: 1 1/2" = 1'-0"



6 EXISTING FLOOR SLAB DETAIL
A-02 SCALE: 1 1/2" = 1'-0"

No.	DESCRIPTION	DATE

RENOVATIONS TO OEFM OFFICE
HADLEY BUILDING
167 LYMAN STREET
WESTBOROUGH, MA 01581

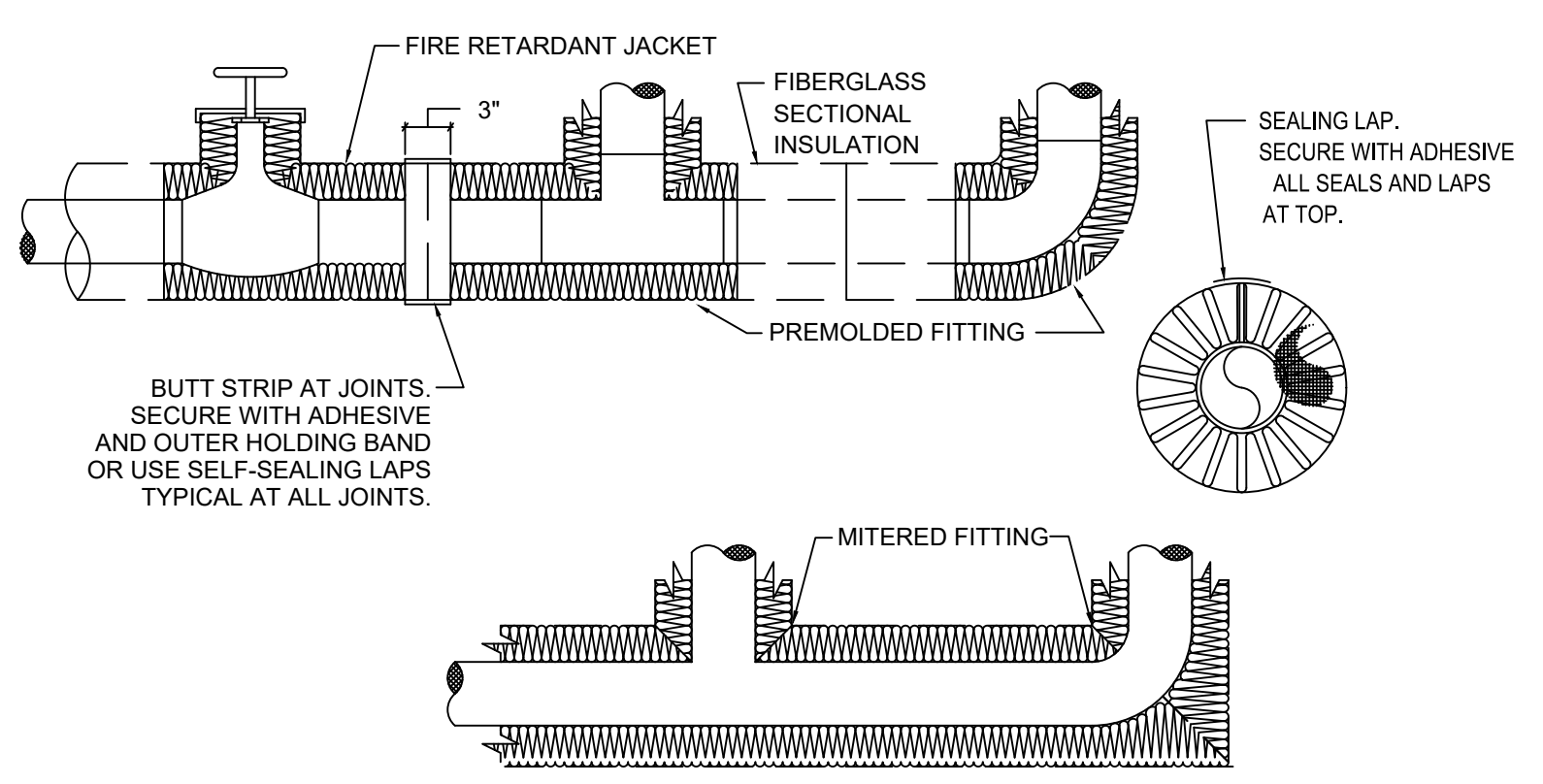
EXISTING CONDITIONS

DATE:	12/20/22
SCALE:	AS NOTED
BY:	WST
SHEET:	A-02

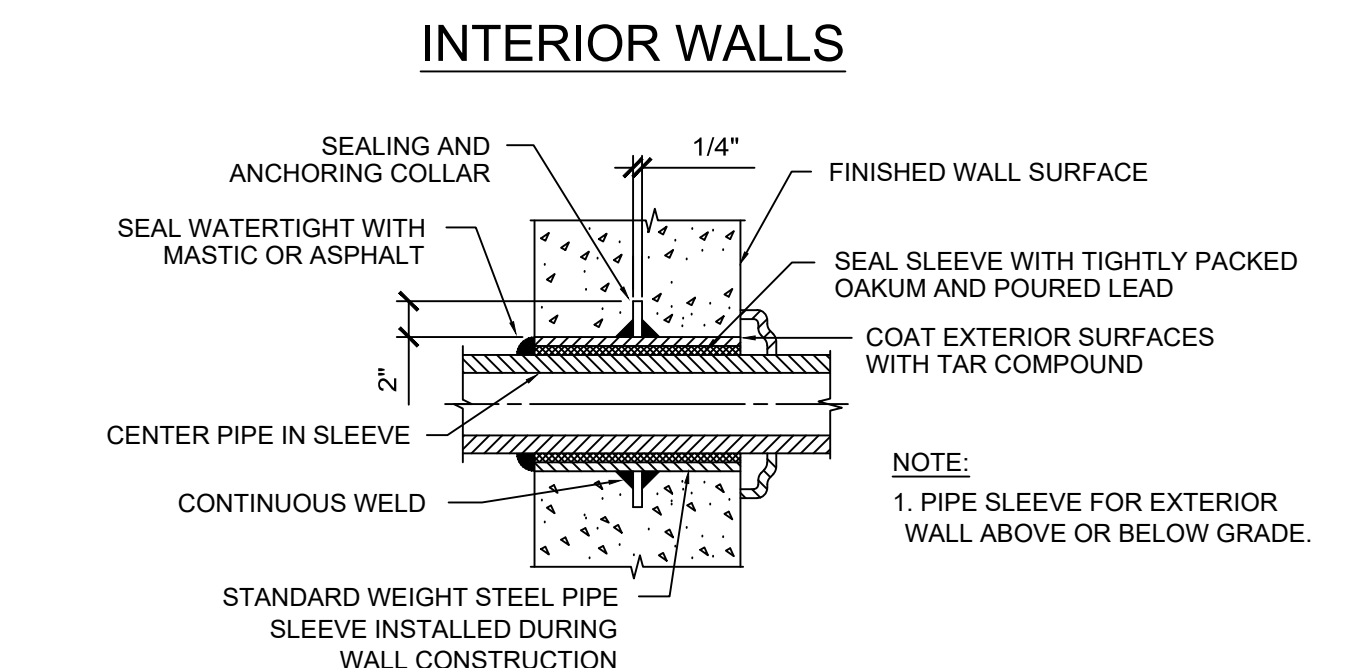
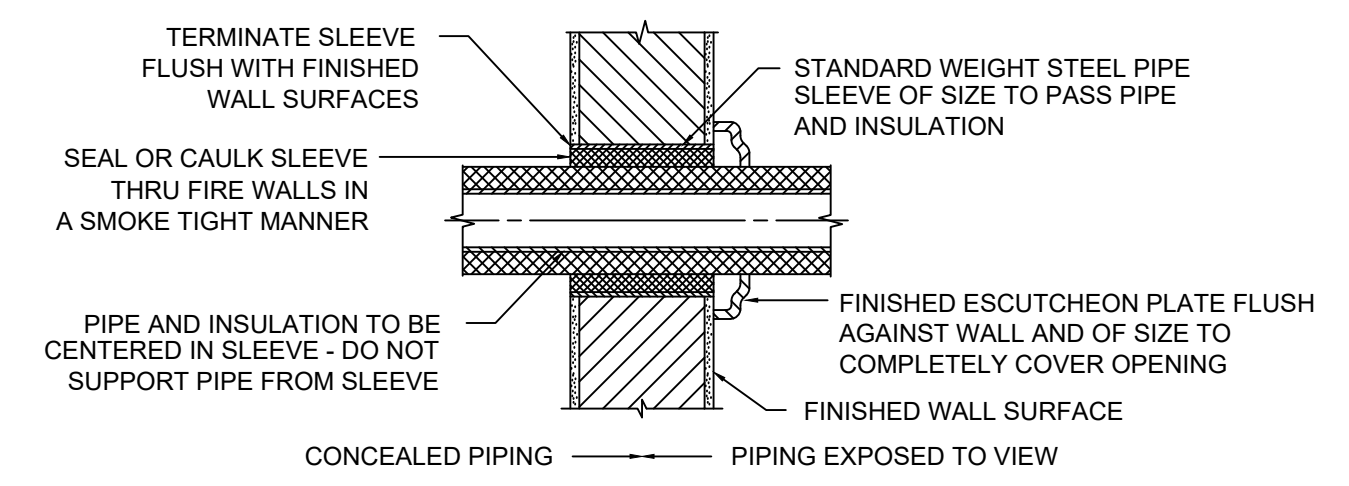
CONDENSING UNIT SCHEDULE																		
SYMBOL	LOCATION	UNIT SERVED	TOSHIBA CARRIER MODEL No.	ELECTRIC SERVICE	MBH	AMB (°F)	COMPRESSOR			CONDENSER FAN			REFRIGERANT TYPE	MCA	MFS	WEIGHT LBS. ±	EER	REMARKS
							No.	TYPE	MODEL	No.	KW	MODEL						
CU-1	GROUND FLOOR	AHU-1-1 AHU-1-2	MMY-MAP0726HT9P-UL	208-3-60	65.7	91	2	PROP	ROTARY	1	1.0	DIRECT	R-410A	27	30	600	14.8	WITH DISCONNECT SWITCH, VARIABLE SPEED, CRANKCASE HEATER, LOW VOLTAGE CONTROL, AUTO-RESTART FUNCTION, CONDENSER HIGH TEMPERATURE PROTECTION, 10 YEAR WARRANTY COMPRESSOR, OTHERWISE 5 YEARS. INTERLOCK WITH AIR HANDLING UNITS

AIR HANDLER SCHEDULE																				
UNIT ID	STAGE	UNIT SERVED	LOCATION	AREA SERVED	TOSHIBA CARRIER MODEL No.	BLOWER				COOLING			HEATING			POWER			REMARKS	
						CFM	KW	TYPE	WATTS	E.A.T. DB	WB	TOTAL MBH	O.A.T.	EDB	OUTPUT MBH	VOLT	Ø	Hz		WEIGH
AHU-1-1	BASE BID	CU-1	HORIZONTAL WALL MOUNT	FIRST FLOOR	MMK-AP0367HPUL	971/912/736	.066	DC	61	80	67	32.9	91	70	40	208	1	60	50	2 WASHABLE FILTERS, REMOTE CONTROL, REMOTE SENSOR, CONDENSATE DRAIN PUMP KIT
AHU-1-2	BASE BID	CU-1	HORIZONTAL WALL MOUNT	FIRST FLOOR	MMK-AP0367HPUL	971/912/736	.066	DC	61	90	67	32.9	91	70	40	208	1	60	50	

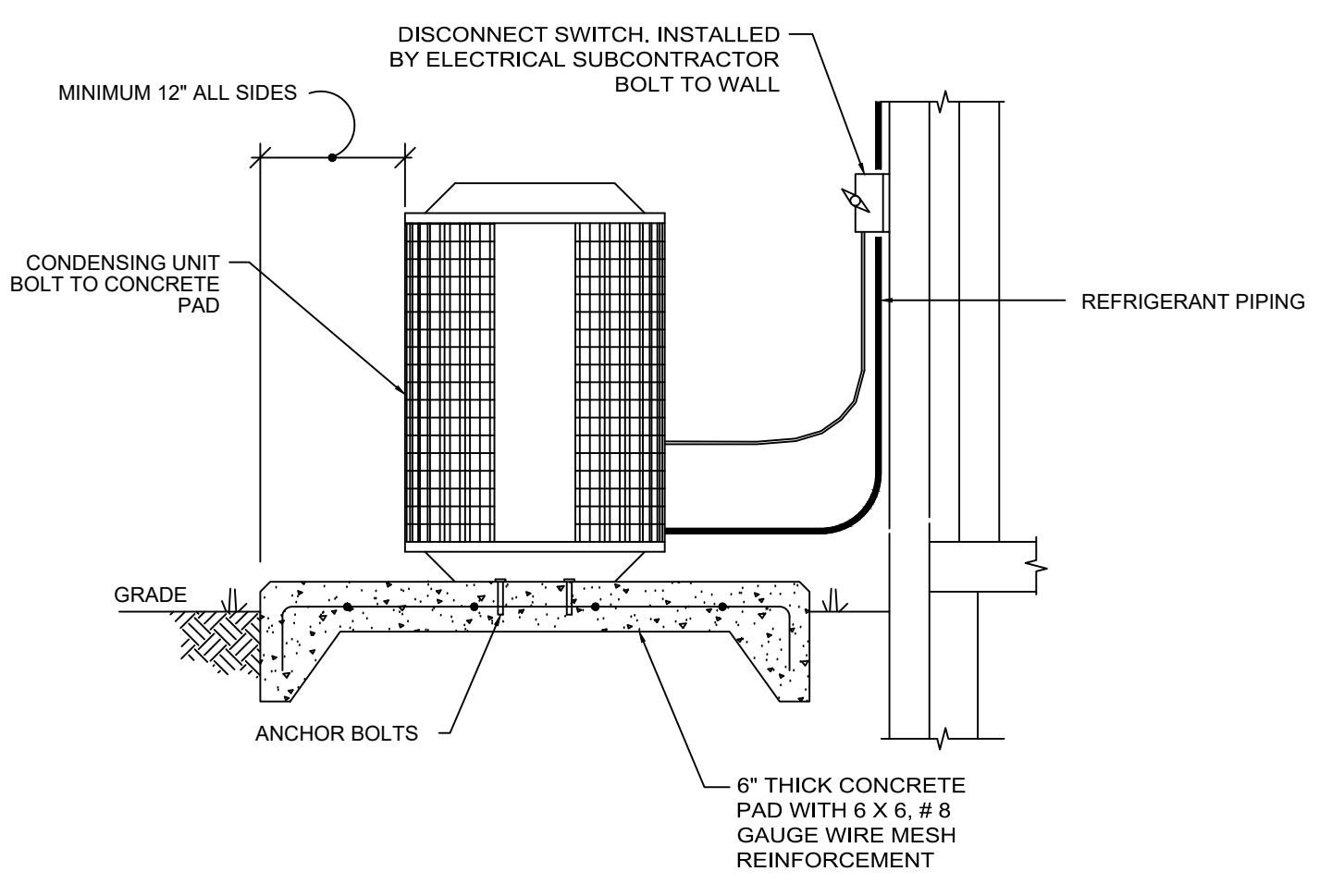
- CONCEALED VALVES AND FITTINGS**
- WRAP WITH 1 INCH THICK, 1 POUND DENSITY TO REQUIRED PIPE INSULATION THICKNESS.
 - SECURE WITH WIRE OR TAPE.
 - VAPOR SEAL COLD WATER, CHILLED WATER AND STORM WATER PIPING.
- EXPOSED VALVES AND FITTINGS**
- PREMOLDED FIBERGLASS OR RADIAL MITERED PIPE INSULATION.
 - SKIM COAT OF INSULATION CEMENT.
 - COAT OF MASTIC.
 - WRAP WITH FIBERGLASS REINFORCING CLOTH.
 - FINISH COAT OF MASTIC
 - OVERLAP 2 INCHES ON PIPE INSULATION.



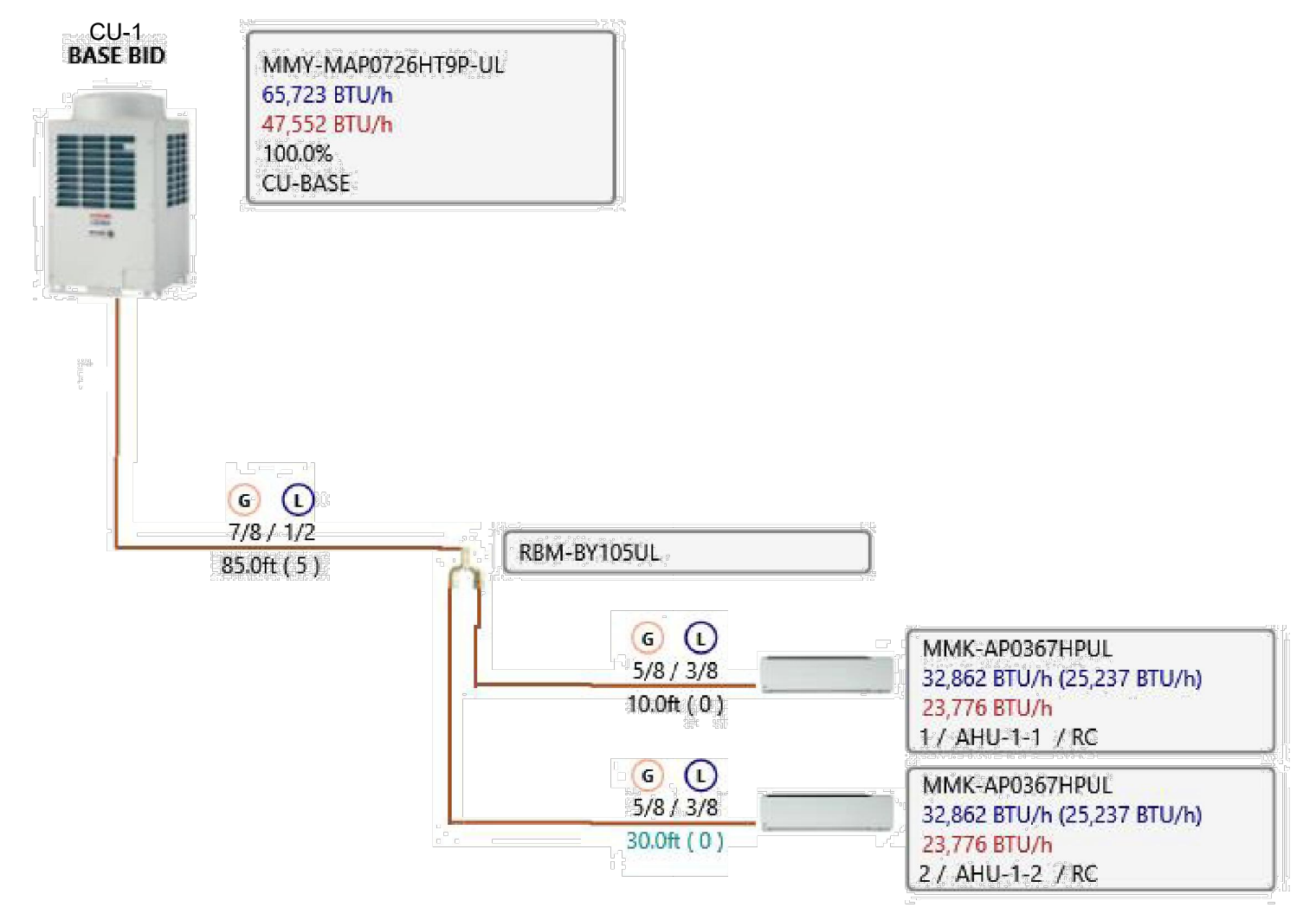
TYPICAL PIPING, VALVE AND FITTING INSULATION DETAIL
NOT TO SCALE



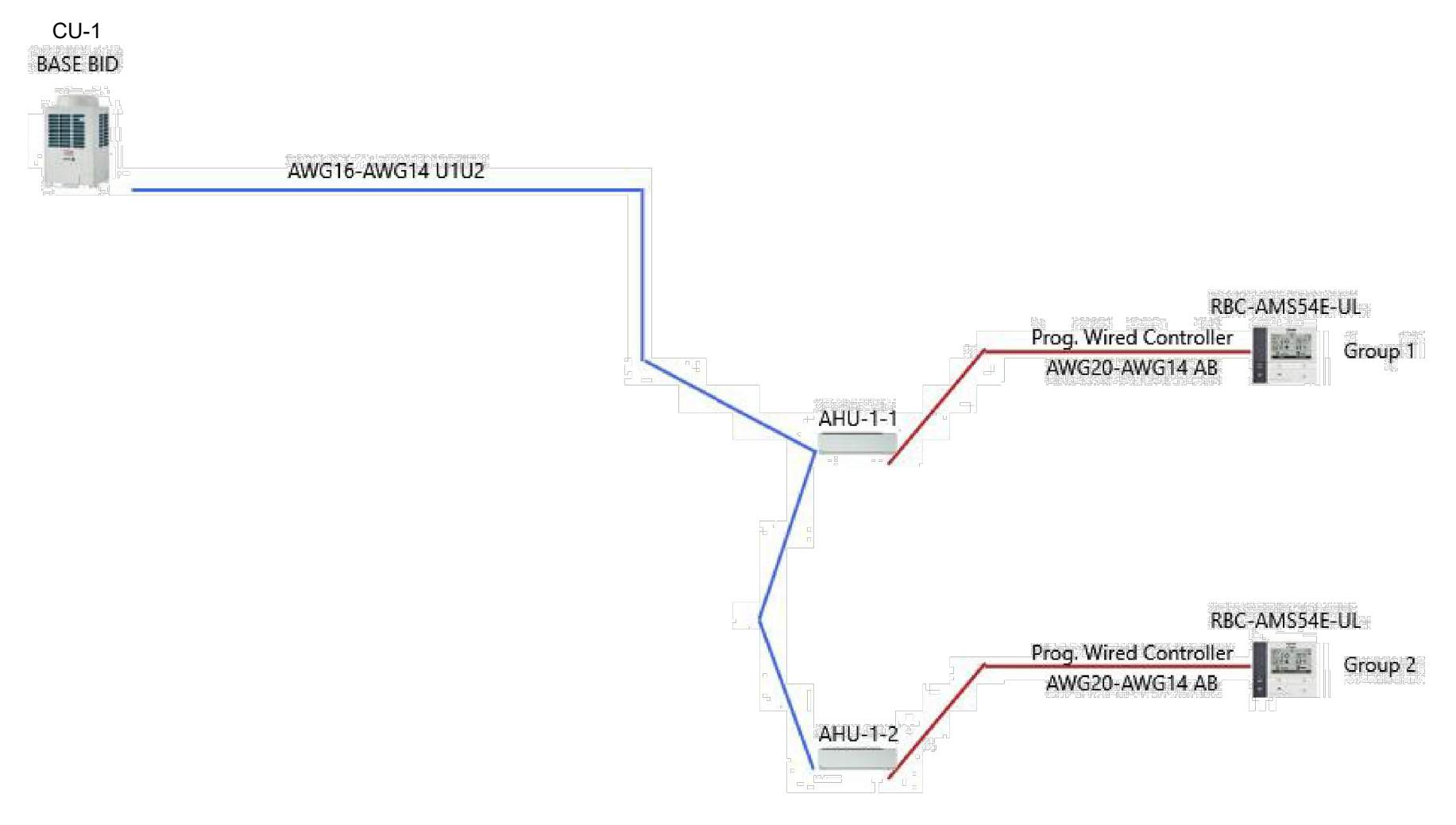
TYPICAL DETAIL OF PIPE SLEEVE THROUGH WALL
NOT TO SCALE



TYPICAL CONDENSING UNIT DETAIL
N.T.S.



PIPING LAYOUT
N.T.S.



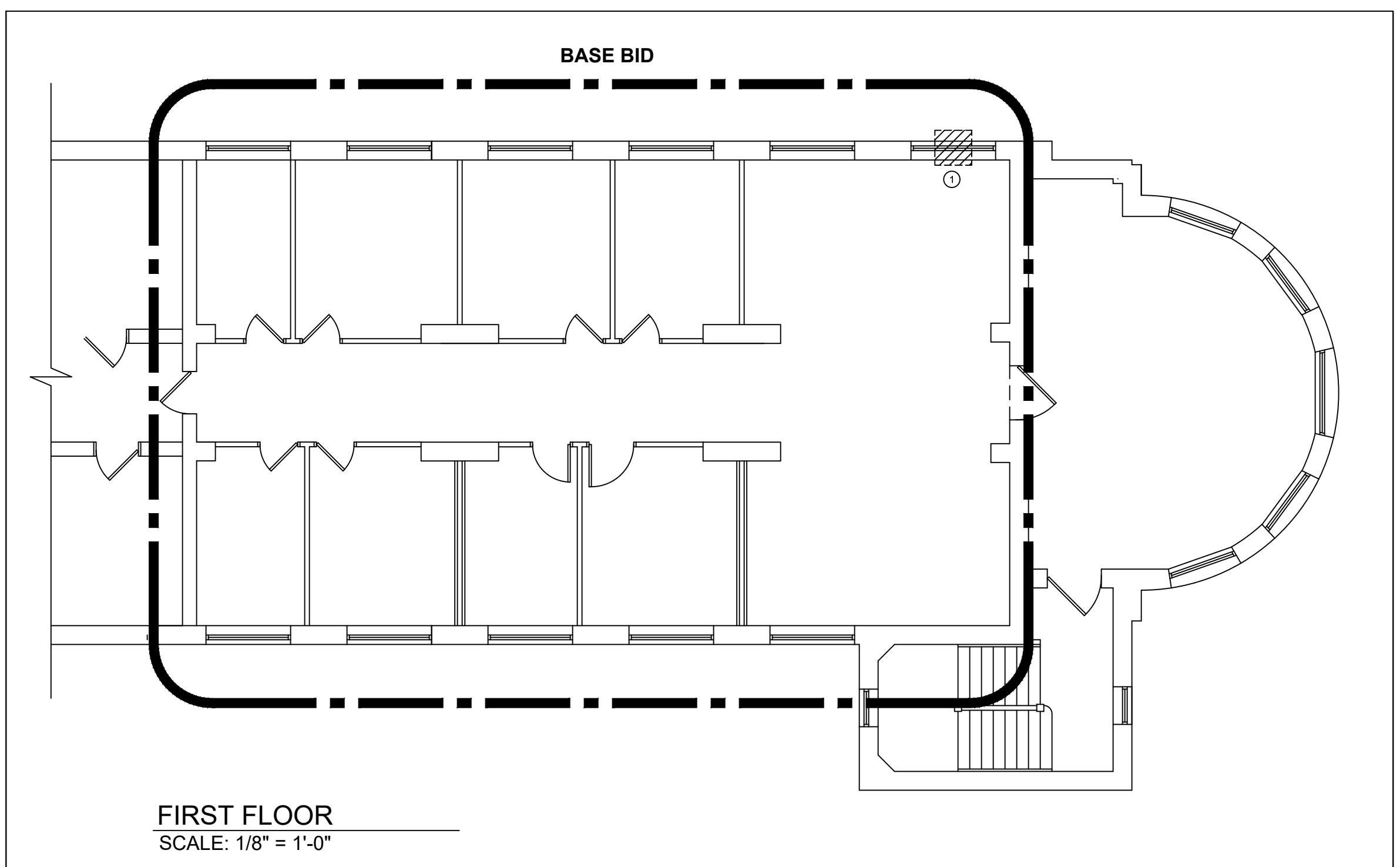
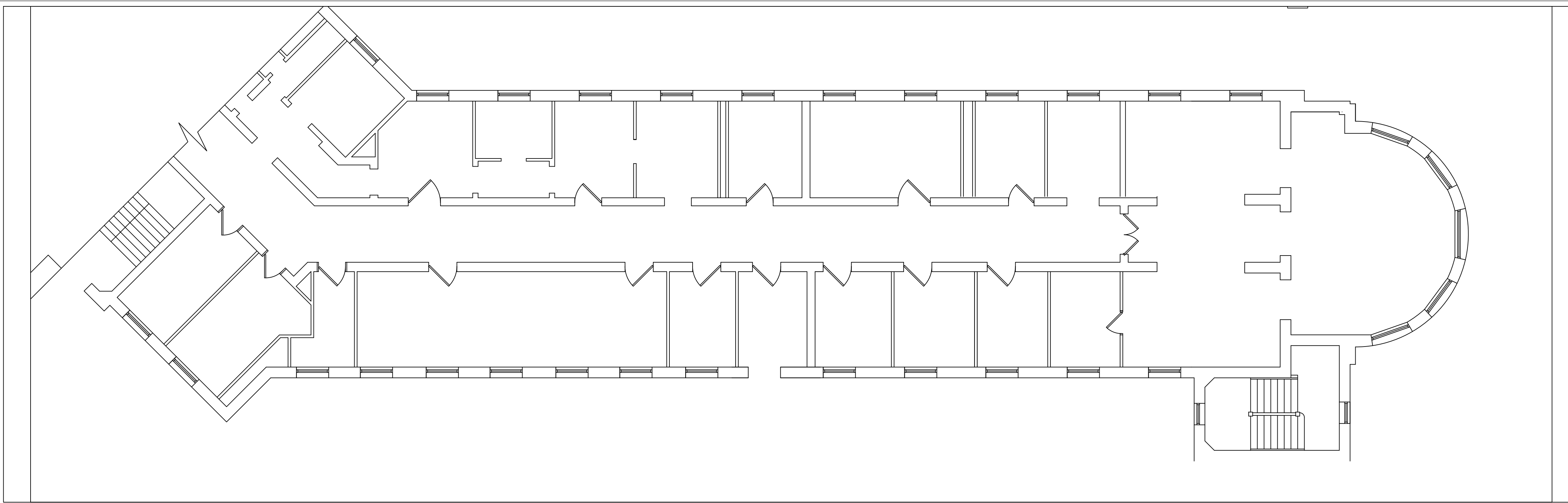
WIRING LAYOUT
N.T.S.

No.	DESCRIPTION	DATE

RENOVATIONS TO OEEM OFFICE
HADLEY BUILDING
167 LYMAN STREET
WESTBOROUGH, MA 01581

MECHANICAL SCHEDULES AND DETAILS

DATE:	12/20/22
SCALE:	N.T.S.
BY:	WST
SHEET:	M-02



FIRST FLOOR
SCALE: 1/8" = 1'-0"

- NOTES:**
- ① DISCONNECT AND REMOVE EXISTING WINDOW AIR CONDITIONING UNIT. INSTALL 3MM POLYCARBONATE SHEET LEXAN™ 8034 OR APPROVED EQUAL. RETURN WINDOW UNITS TO OWNER.
 - ② DISCONNECT AND REMOVE WALL MOUNTED UNIT HEATERS. PATCH WALL AS REQUIRED TO MATCH EXISTING. RETURN UNIT HEATERS TO OWNER.

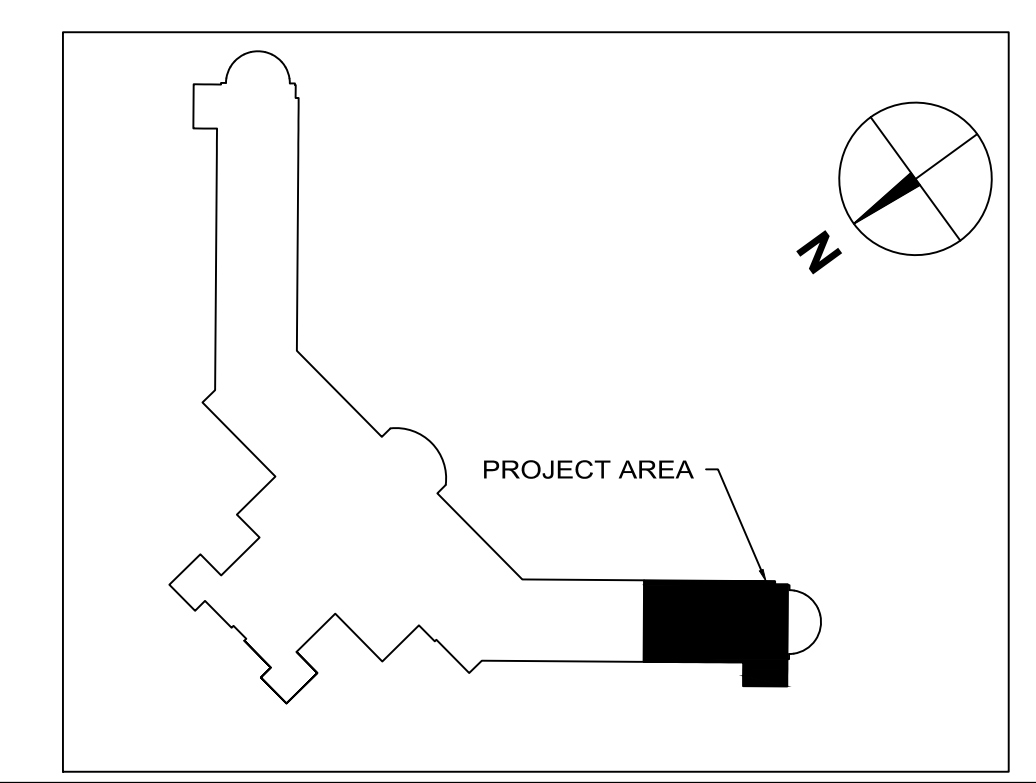
No.	DESCRIPTION	DATE

RENOVATIONS TO OEFM OFFICE
HADLEY BUILDING
167 LYMAN STREET
WESTBOROUGH, MA 01581

MECHANICAL DEMOLITION PLAN

DATE: 12/20/22
SCALE: 1/8" = 1'-0"
BY: WST
SHEET: M-03

KEY PLAN



No.	DESCRIPTION	DATE

RENOVATIONS TO OEFM OFFICE
HADLEY BUILDING
167 LYMAN STREET
WESTBOROUGH, MA 01581

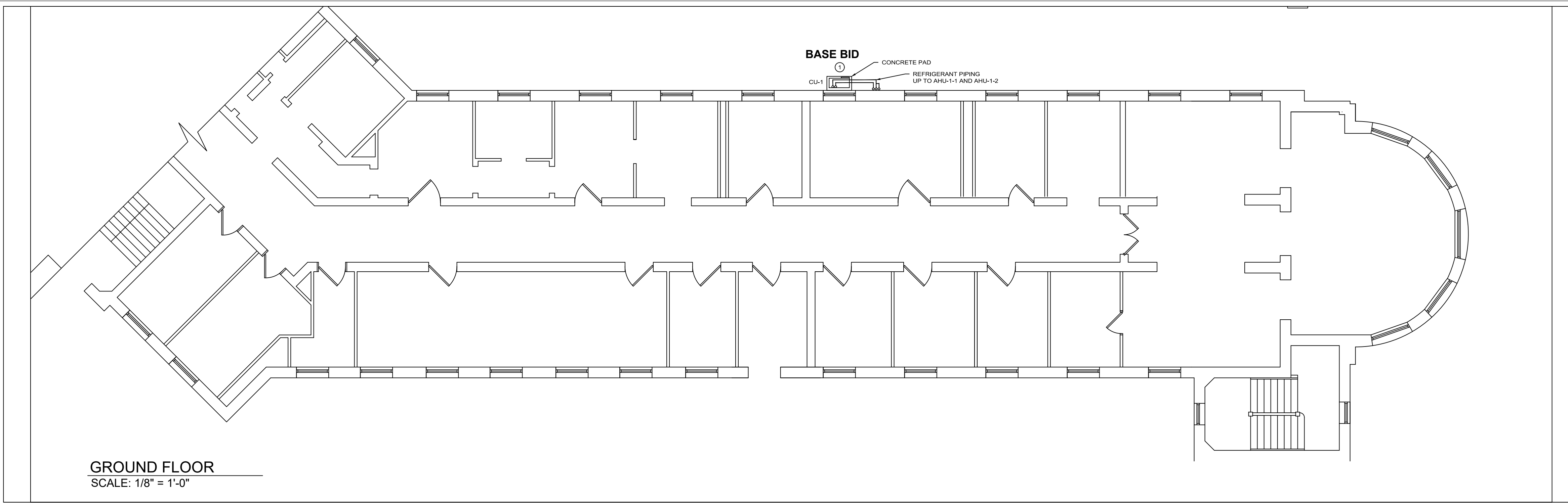
MECHANICAL
NEW WORK
PLAN

DATE: 12/20/22
SCALE: 1/8" = 1'-0"
BY: WST
SHEET: M-04

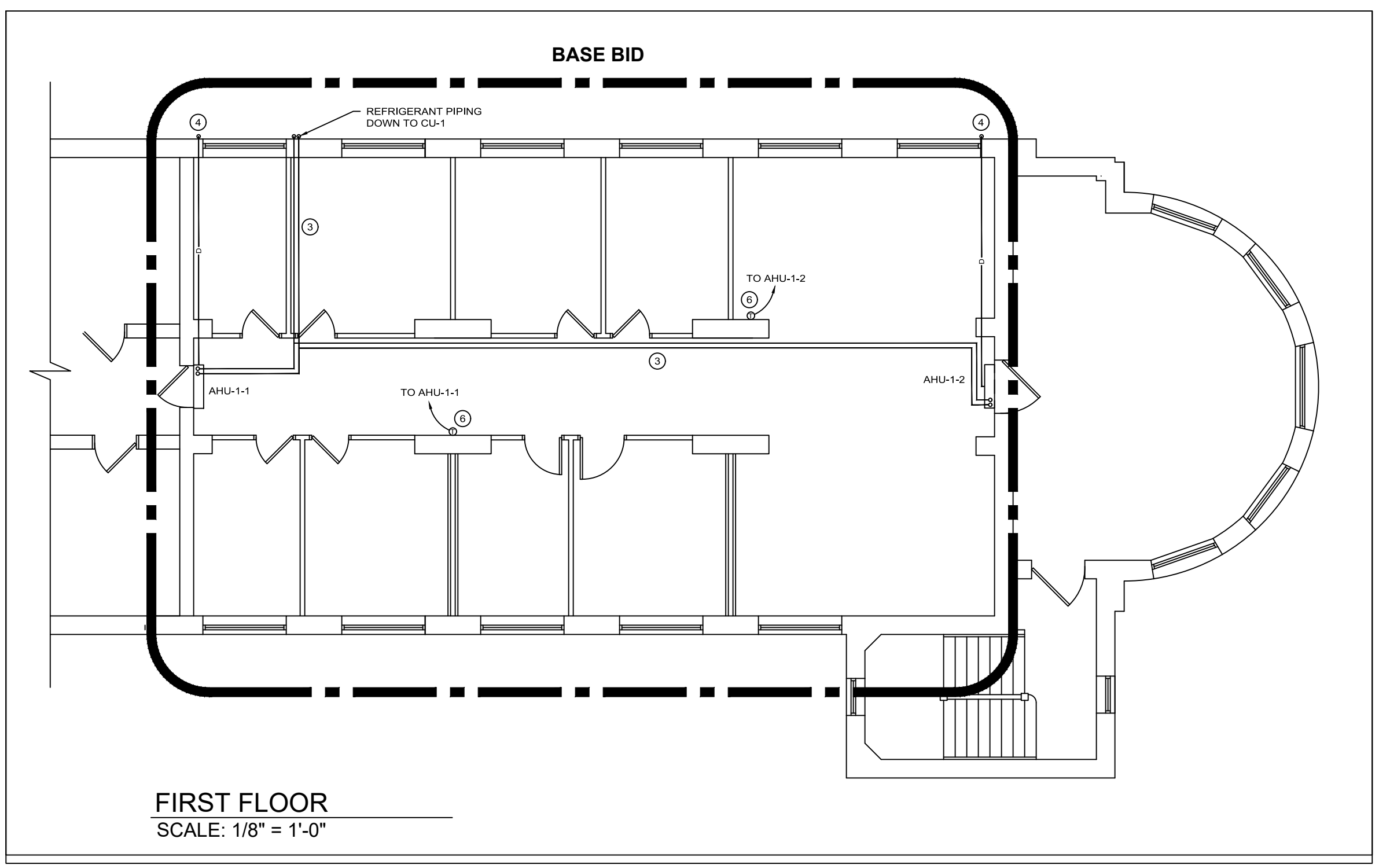
M-04

NOTES:

- ① NEW OUTDOOR UNIT SHALL BE INSTALLED AT GRADE. NEW 24" HIGH STAND AS MANUFACTURED BY QUICK-SLING LLC. OR APPROVED EQUAL, SHALL BE PROVIDED AND INSTALLED. SECURE STAND RIGIDLY TO THE NEW 4" HIGH CONCRETE HOUSEKEEPING PAD.
- ② REFRIGERANT PIPING SHALL BE ENCLOSED IN LINE-HIDE AS MANUFACTURED BY FREDERICK, OR APPROVED EQUAL.
- ③ RUN REFRIGERANT PIPING TIGHT TO EXISTING CEILING.
- ④ NEW 3/4" CONDENSATE DRAIN PIPING. RUN TIGHT TO EXISTING CEILING. ROUTE DOWN 12" ABOVE NEW SPLASH BLOCK AT GRADE. THIS CONTRACTOR SHALL PROVIDE SPLASH BLOCK. CONDENSATE PIPING SHALL PITCH A MINIMUM OF 1/8" PER 1'-0" TOWARDS THE END TERMINATION.
- ⑤ NEW OUTDOOR UNIT SHALL BE INSTALLED ON THE WALL. NEW WALL MOUNTED BRACKET AS MANUFACTURED BY QUICK-SLING LLC. OR APPROVED EQUAL, SHALL BE PROVIDED AND INSTALLED PER MANUFACTURER'S INSTALLATION MANUAL.
- ⑥ PROGRAMMABLE THERMOSTAT. LOCATION SHALL BE FIELD VERIFIED BY USERS.

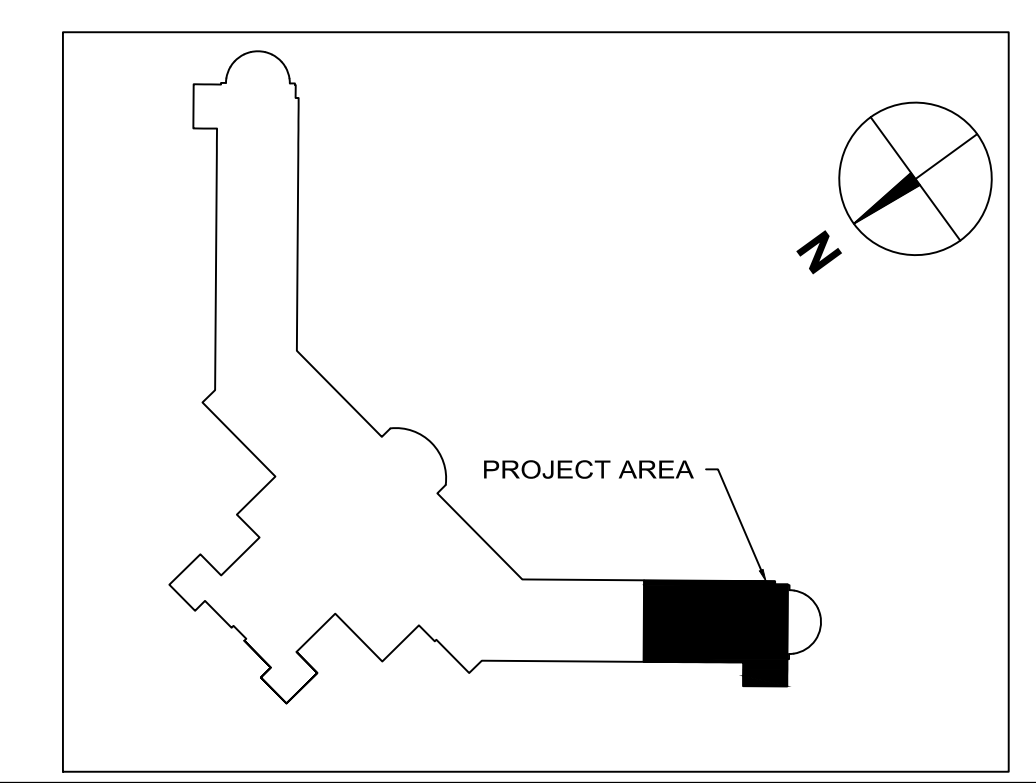


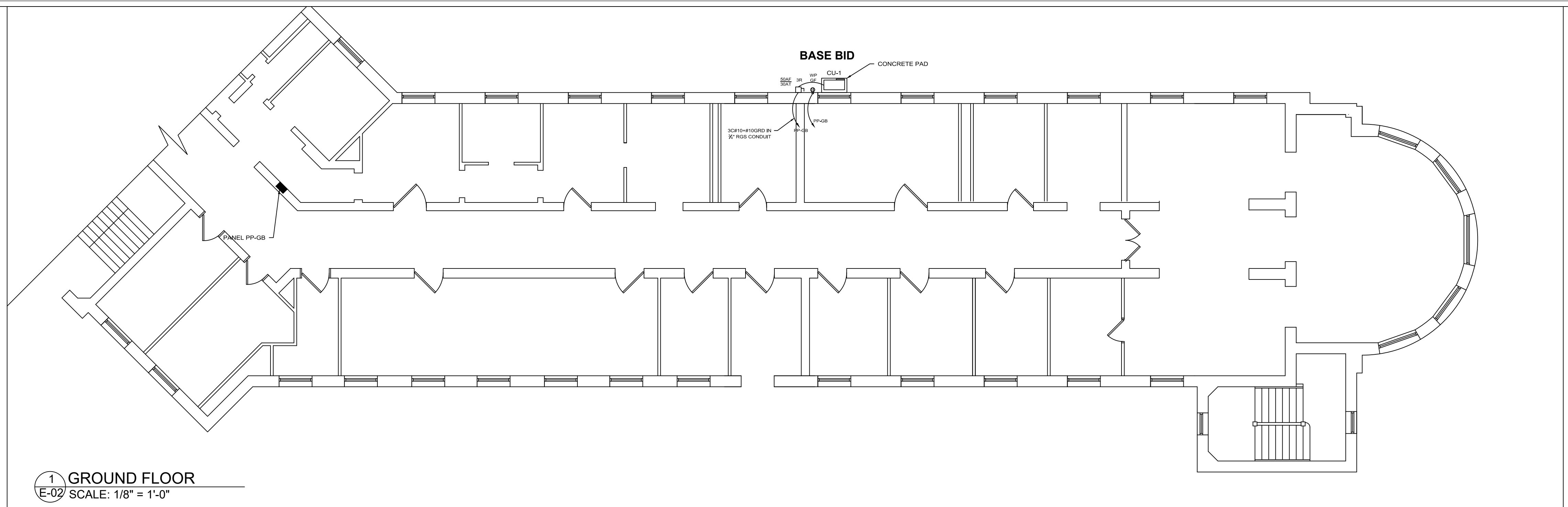
GROUND FLOOR
SCALE: 1/8" = 1'-0"



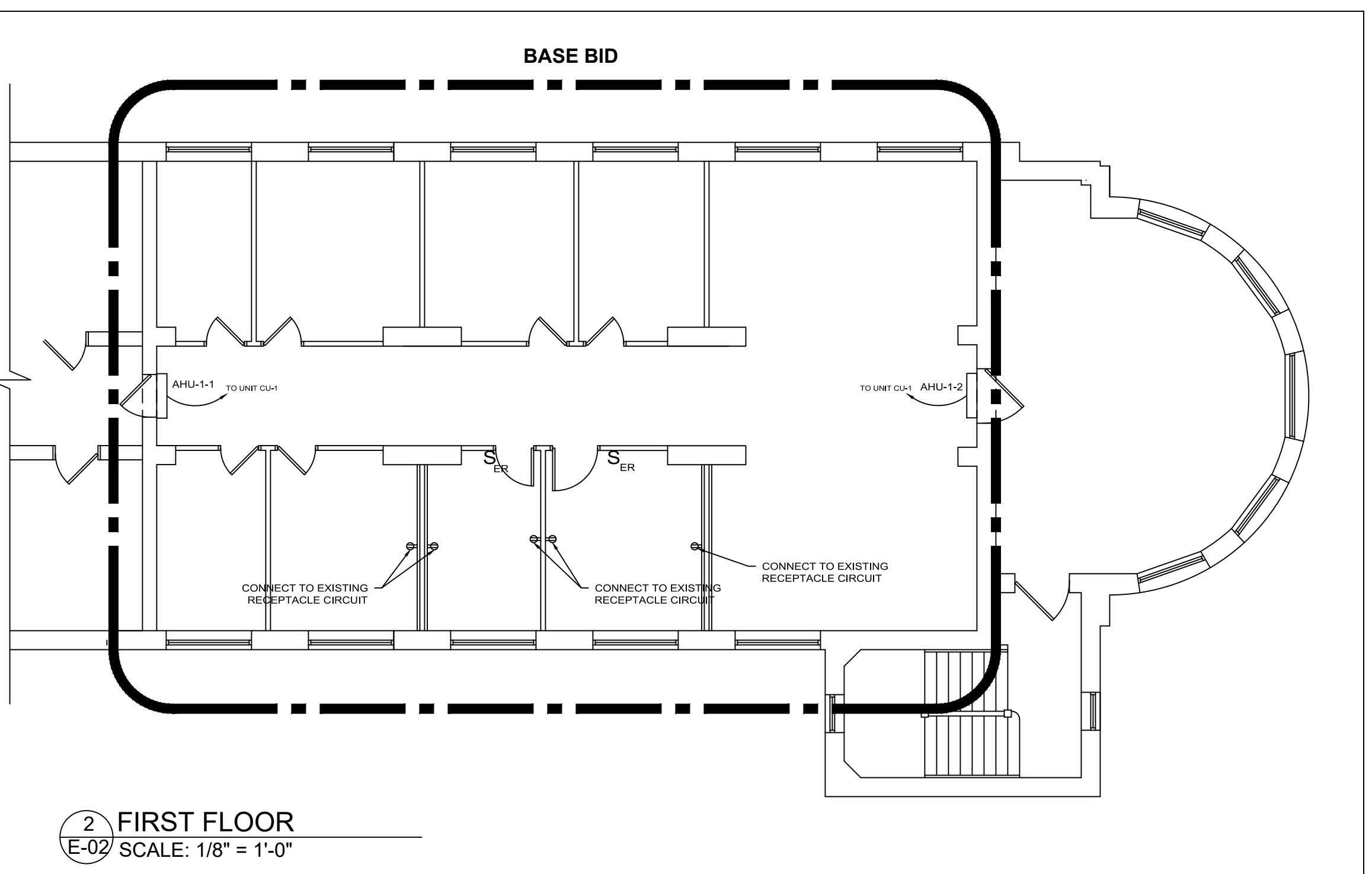
FIRST FLOOR
SCALE: 1/8" = 1'-0"

KEY PLAN





1 GROUND FLOOR
E-02 SCALE: 1/8" = 1'-0"



2 FIRST FLOOR
E-02 SCALE: 1/8" = 1'-0"

- NOTES:**
1. THE EC SHALL INVESTIGATE ANY NON-USED CIRCUIT BREAKERS IN PANEL PP-GB TO ACCOMMODATE BREAKERS FOR NEW OUTDOOR UNIT, CU-1.
 2. ALL INTERIOR AND EXTERIOR CIRCUIT WIRING BETWEEN NEW OUTDOOR UNITS AND NEW INDOOR UNITS SHALL BE INSTALLED IN #8 SPLIT SYSTEM CABLE INSIDE REFRIGERANT PIPING COVERING, PROVIDED BY GC. SEAL ALL BUILDINGS PENETRATIONS WEATHERTIGHT.
 3. CIRCUIT CONDENSATE PUMP TO BRANCH CIRCUIT FEEDING INDOOR UNITS.
 4. CIRCUIT NEW OFFICES RECEPTACLES TO EXISTING OEFMS RECEPTACLE CIRCUITS. EXTEND BRANCH CIRCUIT WIRING TO NEW DEVICES. PROVIDE NEW CIRCUIT BREAKERS AS NEEDED.
 5. ELECTRICAL CONTRACTOR TO REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION AND ELECTRICAL RATINGS OF NEW UNIT CU-1 AND ALL ASSOCIATED UNITS.
 6. ELECTRICAL CONTRACTOR TO PROVIDE NEW CIRCUIT BREAKERS IN EXISTING ELECTRICAL PANELS TO FEED NEW UNITS AS NEEDED.
 7. PROVIDE NEW COPPER WIRING AND HOT DIPPED RGS CONDUIT AND CONDUIT SUPPORT FOR UNIT CU-1. CONDUIT ROUTING TO EXISTING PANEL SHALL BE FINALIZED IN FIELD PER DMH REPRESENTATIVE. VOLTAGE DROP SHALL NOT EXCEED 5 OHMS PER NEG. REFER TO DRAWING M-02 FOR CONTROL WIRING AND CONNECTIONS FROM CONDENSING UNIT TO AIR HANDLING UNITS.

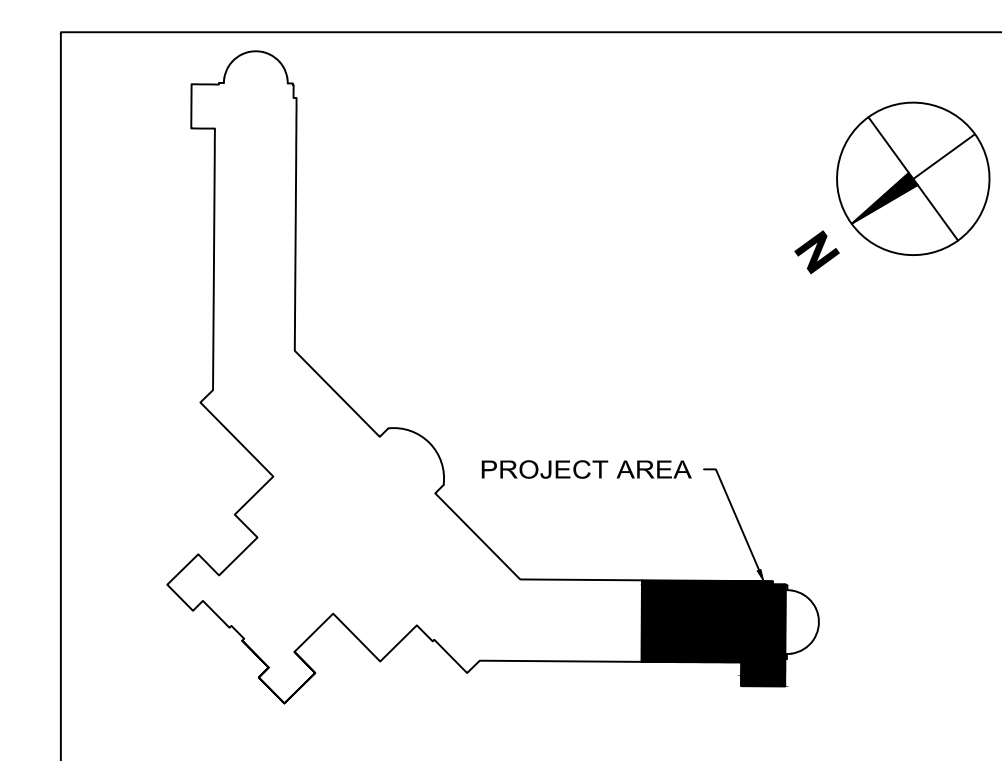
No.	DESCRIPTION	DATE

RENOVATIONS TO OEFM OFFICE
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167 LYMAN STREET
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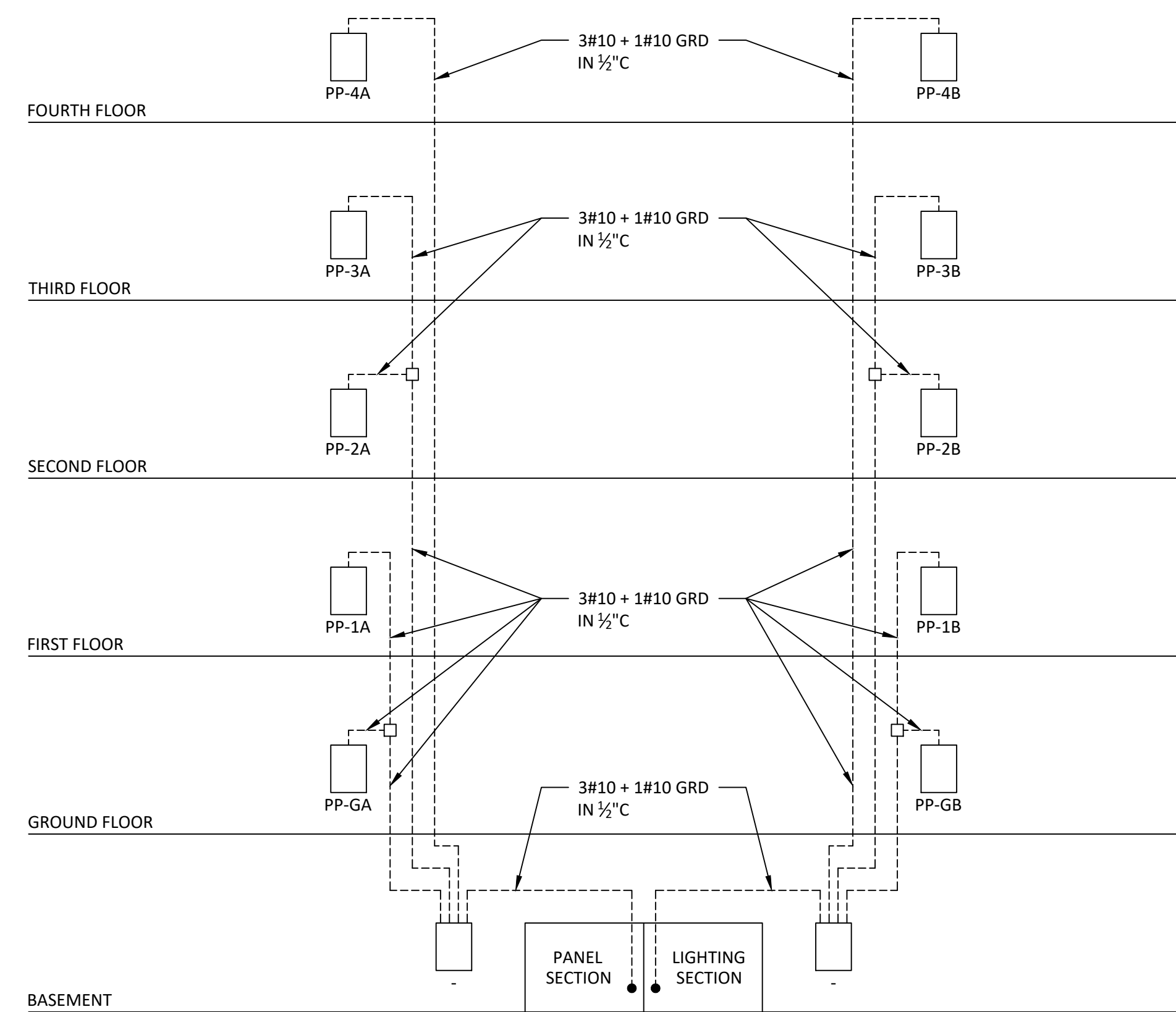
ELECTRICAL POWER PLAN

DATE: 12/20/22
SCALE: 1/8" = 1'-0"
BY: WST
SHEET: E-02

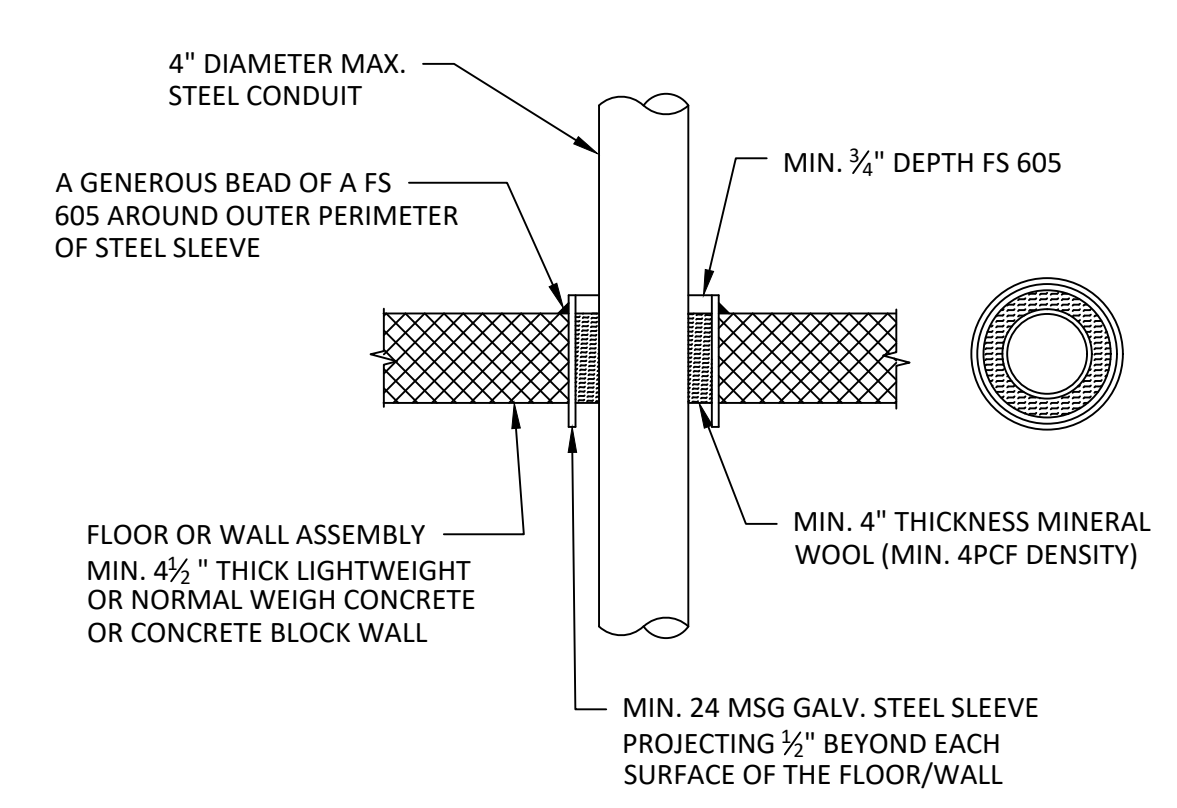
KEY PLAN



Project: HADLEY BUILDING															
Panel: PP-GB				Main: 200A MCB				Mounting: surface							
Rating: 120/208V, 3 Phase, 4 Wire, WYE				Main Bus: 225				RMS Sym. SSCR:							
LOCATION: GROUND FLOOR															
Ckt #	Item #	Description of Load	Breaker				Load Per Phase			Breaker			Description of Load	Item #	Ckt #
			Size	Trip	Pole	Current	A	B	C	Current	Size	Trip			
1		NEW CU-1	30	30	3				30	30	3		CU-1 DISC.	2	
3		NEW WP-GF	20	20	1				20	20	1		NEW WP-GF	4	
5		EXISTING LOAD											EXISTING LOAD	6	
7		EXISTING LOAD											EXISTING LOAD	8	
9		EXISTING LOAD											EXISTING LOAD	10	
11		EXISTING LOAD											EXISTING LOAD	12	
13		EXISTING LOAD											EXISTING LOAD	14	
15		EXISTING LOAD											EXISTING LOAD	16	
17		EXISTING LOAD											EXISTING LOAD	18	



EXISTING POWER DISTRIBUTION RISER



CONDUIT PENETRATION FIRE STOP
N.T.S.

No.	DESCRIPTION	DATE

RENOVATIONS TO OEFM OFFICE
HADLEY BUILDING
167 LYMAN STREET
WESTBOROUGH, MA 01581

ELECTRICAL
RISER
DIAGRAM AND
PANEL
SCHEDULES

DATE: 12/20/22
SCALE: 1/8" = 1'-0"
BY: WST
SHEET: E-03