

BID PACKAGE COVER PAGE

**DEPARTMENT OF MENTAL HEALTH
OFFICE OF ENGINEERING AND FACILITIES MANAGEMENT
167 LYMAN ST.
WESTBOROUGH, MA 01581**

BID DOCUMENTS FOR:

**2021-052 INPATIENT BATHROOM RENOVATIONS - CAIN BUILDING
TAUNTON STATE HOSPITAL
60 HODGES AVENUE
TAUNTON, MA 02780**

**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, April 13, 2023**

Filed Sub-bids Submission Deadline: **(HVAC and/or Plumbing) 12:00 P.M. Wednesday, April 5, 2023**

The Category of Work is: **GENERAL CONTRACTOR (General Contractor and sub bidders must be DCAMM Certified)**

Project Name: **2021-052 Inpatient Bathroom Renovations – Cain Building**

Project Location: **Taunton State Hospital - 60 Hodges Ave. Taunton, MA 02780**

Estimated Construction Cost: **\$302,000.⁰⁰**

Renovation of six (6) Shower Rooms; and conversion of two (2) Tub Rooms into MAAB compliant Shower Rooms and upgrade of their fan coil units at the Cain building in Taunton State Hospital, in Taunton, Massachusetts, according to project's plans and specifications.

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 date 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 and sub-bid proposal must be secured by an uploaded photocopy of an accompanying **deposit of 5%** of the total bid amount, including all alternates, 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 **03/15/2023** 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 the File sub-bidders and will be held **10:00AM on Wednesday 03/29/2023**. A Pre-Bid Site Visit is **MANDATORY** for General Contractor and will be held **10:00AM on Wednesday 04/05/2023**. **Contractors shall meet the Project Engineer at the Glass building lobby at Taunton State Hospital, 60 Hodges Ave. Taunton, MA 02780** to review project details. Please contact DMH Project Engineer, Mariana O'Brien, at (857) 274-1048. **All sub-bid questions must be posted on COMMBUYS by Thursday 03/30/2023 12:00PM. All General bid questions must be posted on COMMBUYS by Thursday 04/06/2023 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 one hundred twenty (120) calendar 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 ENGINEERING AND FACILITIES MANAGEMENT
HADLEY BUILDING
167 LYMAN STREET
WESTBOROUGH, MASSACHUSETTS 01581

***INPATIENT BATHROOM RENOVATIONS
AT
CAIN-TAUNTON STATE HOSPITAL
60 HODGES AVE.
TAUNTON, MA 02780
(DMH Project #2021-052)***

**NOTICE OF MANDATORY GENERAL CONTRACTOR
PRE-BID SITE VISIT**

ALL CONTRACTORS INTERESTED IN BIDDING ON THIS PROJECT ARE
HEREBY NOTIFIED OF A MANDATORY SITE VISIT

ON

WEDNESDAY, APRIL 5, 2023 AT 10:00 A.M.

**CONTRACTORS ARE TO MEET IN THE GLASS
BUILDING LOBBY**

NON-MANDATORY VISIT FOR FILE SUB-BIDDERS IS SCHEDULED ON
WEDNESDAY, MARCH 29, 2023 AT 10:00 A.M.



BID PACKAGE

PART I

INSTRUCTIONS TO BIDDERS

**2021-052 Inpatient Bathroom Renovations - Cain Building
Taunton State Hospital
60 Hodges Ave.
Taunton, MA 02780**

Instructions to Bidders

Attachment A:

Minimum Wage Rates

Prevailing Wage Schedule – Bidder Acknowledgement Document

Attachment B: Form Used During Bidding

Form for General Bid

General Bidder Check list

General Bidder Documents to Upload into COMMBUYS Checklist

Attachment C: Form Used During Bidding

Form for Sub Bid

Sub Bid Checklist

Sub Bidder Documents to Upload into COMMBUYS Checklist



**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
857-274-1048

**Project Title: 2021-052 Inpatient Bathroom Renovations - Cain Building
Taunton State Hospital
60 Hodges Ave.
Taunton, MA 02780**

Category of Work File Sub-bids: (HVAC and/or Plumbing)

**Category of Work is: GENERAL CONTRACTOR
(General Contractor and sub-bidders must be DCAMM
CERTIFIED)**

Project Description and Scope:

Renovation of six (6) shower rooms; and conversion of two (2) Tub Rooms into MAAB compliant shower rooms and upgrade of their fan coil units at the Cain building in Taunton State Hospital, in Taunton, Massachusetts, according to project's plans and specifications.

Deadline for filing General bids is at: 2:00 PM Thursday April 13, 2023

Deadline for filing Sub-bids is at: (HVAC or Plumbing) 12:00 PM Wednesday April 5, 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 Attachments B and C to these Instructions to Bidders.

The work is to be accomplished within one hundred twenty (120) calendar days from a Notice To Proceed, 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 2 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:

Section #	Bid Package Part#	Filed Sub-trade	All Bid Deposits 5% of Bid Amount
220001 & Plans	Part 4 & Plans	PLUMBING	
230001 & Plans	Part 4 & Plans	HVAC	

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

2.1 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 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 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

3.1 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 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 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 General Bidders concerning interpretation of the Contract Documents must be uploaded to **COMMBUYS by 12:00PM Thursday April 6, 2023**, or, if a question pertains to filed sub-Bid work must be uploaded to **COMMBUYS, by 12:00PM Thursday March 30, 2023**. 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 and Sub Bids shall be submitted on the Form for General Bid or Form for Sub-bid respectively included in Attachments B and C 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 each 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. Each Sub-bidder shall acknowledge all required alternates in Part A on the Form for Sub-Bid by entering the dollar amount of addition or subtraction necessitated by each alternate.

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. Sub-bidders shall enter on the Form for Sub-Bid the amount of addition or subtraction necessitated only for those alternates expressly identified in the Bid Documents as part of the sub-bidder's category of work. If the alternate is not identified in the Bid Documents as affecting the sub-Bidder's category of work then the sub-Bidder shall so indicate by writing "N/A" and only "N/A" or leaving the alternate blank.

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

5.7 If the space for indicating a requirement for payment and performance bonds for filed Sub-Bidders is left blank by the General Bidder on the Form for General Bid, the Awarding Authority shall interpret this as a "NO".

5.8 Costs for the selected filed sub-bidder's bond premiums shall be paid for by the selected general Contractor bidder 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 If the general bidders are instructed to carry an amount for a given sub-trade, 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 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 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 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 Bidder or Sub Bidder is to **include a photo copy of the bid deposit** of which shall be uploaded into COMMBUYS.

General and Sub Bid for:

Project Title:

**2021-052 Inpatient Bathroom Renovations - Cain Building
Taunton State Hospital
60 Hodges Ave.
Taunton, MA 02780**

General or Sub Bidders name, business address, and telephone number below:

6.2 All Bids must be received by the Awarding Authority via the COMMBUYS Website no later than the **Deadline for Filing Sub-bids and the Deadline for Filing General Bid dates** specified on page 2 of these Instructions to Bidders. Any Bid received after these deadline dates and times will not be accepted.

6.3 Bidding results will not be given out over the telephone prior to 1:00 PM of the day following the General Bid opening.

SECTION 7 - WITHDRAWAL OF BIDS; REJECTION OF BIDS

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

7.2 A Bidder may withdraw its Bid without penalty by E-mailing 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 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 receive 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 performance and a payment 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 subtrade 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 properly executed originals 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.

1. Owner-Contractor Agreement
2. 100% Performance and 100% Payment Bonds with power of attorney attached
3. Certificates of Insurance evidencing coverages in amounts required by the Contract Documents
4. 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.

5. Any other documents that the Awarding Authority may reasonably require in connection with the Contractor's execution of the Contract.

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 100% Performance and 100% 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: 20230307-060

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: _____

CIRCLE:	GENERAL	SUB BIDDER
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MAURA HEALEY
Governor

KIM DRISCOLL
Lt. Governor

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

Prevailing Wage Rates

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

LAUREN JONES
Secretary

MICHAEL FLANAGAN
Director

Awarding Authority: Department of Mental Health
Contract Number: 2021-052 **City/Town:** TAUNTON
Description of Work: Renovation of six (6) Shower Rooms; and conversion of two (2) Tub Rooms into MAAB compliant Shower Rooms and upgrade of their fan coil units at the Cain building in Taunton State Hospital.
Job Location: 60 Hodges Ave. Taunton, MA 02780

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 1)</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 (SOUTHERN MASS)</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>	01/01/2023	\$47.37	\$7.07	\$20.31	\$0.00	\$74.75
	01/01/2024	\$48.12	\$7.07	\$20.60	\$0.00	\$75.79

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$30.79	\$7.07	\$13.22	\$0.00	\$51.08
2	65	\$30.79	\$7.07	\$13.22	\$0.00	\$51.08
3	70	\$33.16	\$7.07	\$14.23	\$0.00	\$54.46
4	75	\$35.53	\$7.07	\$15.24	\$0.00	\$57.84
5	80	\$37.90	\$7.07	\$16.25	\$0.00	\$61.22
6	85	\$40.26	\$7.07	\$17.28	\$0.00	\$64.61
7	90	\$42.63	\$7.07	\$18.28	\$0.00	\$67.98
8	95	\$45.00	\$7.07	\$19.32	\$0.00	\$71.39

Effective Date - 01/01/2024

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

Notes:

Apprentice to Journeyworker Ratio:1:4

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) BRICKLAYERS LOCAL 3 (FOXBORO)	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
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Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Foxboro

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

Effective Date - 08/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.13	\$11.49	\$21.65	\$0.00	\$63.27
2	60	\$36.16	\$11.49	\$21.65	\$0.00	\$69.30
3	70	\$42.18	\$11.49	\$21.65	\$0.00	\$75.32
4	80	\$48.21	\$11.49	\$21.65	\$0.00	\$81.35
5	90	\$54.23	\$11.49	\$21.65	\$0.00	\$87.37

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER	12/01/2022	\$53.05	\$14.25	\$16.05	\$0.00	\$83.35
OPERATING ENGINEERS LOCAL 4	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	12/01/2022	\$43.73	\$9.35	\$17.97	\$0.00	\$71.05
LABORERS - FOUNDATION AND MARINE	06/01/2023	\$44.73	\$9.35	\$17.97	\$0.00	\$72.05
	12/01/2023	\$45.98	\$9.35	\$17.97	\$0.00	\$73.30
	06/01/2024	\$47.46	\$9.35	\$17.97	\$0.00	\$74.78
	12/01/2024	\$48.93	\$9.35	\$17.97	\$0.00	\$76.25
	06/01/2025	\$50.43	\$9.35	\$17.97	\$0.00	\$77.75
	12/01/2025	\$51.93	\$9.35	\$17.97	\$0.00	\$79.25
	06/01/2026	\$53.48	\$9.35	\$17.97	\$0.00	\$80.80
	12/01/2026	\$54.98	\$9.35	\$17.97	\$0.00	\$82.30

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CAISSON & UNDERPINNING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2022	\$42.58	\$9.35	\$17.97	\$0.00	\$69.90
	06/01/2023	\$43.58	\$9.35	\$17.97	\$0.00	\$70.90
	12/01/2023	\$44.83	\$9.35	\$17.97	\$0.00	\$72.15
	06/01/2024	\$46.31	\$9.35	\$17.97	\$0.00	\$73.63
	12/01/2024	\$47.78	\$9.35	\$17.97	\$0.00	\$75.10
	06/01/2025	\$49.28	\$9.35	\$17.97	\$0.00	\$76.60
	12/01/2025	\$50.78	\$9.35	\$17.97	\$0.00	\$78.10
	06/01/2026	\$52.33	\$9.35	\$17.97	\$0.00	\$79.65
	12/01/2026	\$53.83	\$9.35	\$17.97	\$0.00	\$81.15
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2022	\$42.58	\$9.35	\$17.97	\$0.00	\$69.90
	06/01/2023	\$43.58	\$9.35	\$17.97	\$0.00	\$70.90
	12/01/2023	\$44.83	\$9.35	\$17.97	\$0.00	\$72.15
	06/01/2024	\$46.31	\$9.35	\$17.97	\$0.00	\$73.63
	12/01/2024	\$47.78	\$9.35	\$17.97	\$0.00	\$75.10
	06/01/2025	\$49.28	\$9.35	\$17.97	\$0.00	\$76.60
	12/01/2025	\$50.78	\$9.35	\$17.97	\$0.00	\$78.10
	06/01/2026	\$52.33	\$9.35	\$17.97	\$0.00	\$79.65
	12/01/2026	\$53.83	\$9.35	\$17.97	\$0.00	\$81.15
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL 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"						
CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	03/01/2023	\$45.78	\$8.68	\$19.97	\$0.00	\$74.43

Apprentice - CARPENTER - Zone 2 Eastern MA

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 \$30.71/ 3&4 \$36.93/ 5&6 \$56.82/ 7&8 \$63.06

Apprentice to Journeyworker Ratio:1:5

CARPENTER WOOD FRAME <i>CARPENTERS-ZONE 3 (Wood Frame)</i>	04/01/2022	\$23.66	\$7.21	\$4.80	\$0.00	\$35.67
	04/01/2023	\$24.16	\$7.21	\$4.80	\$0.00	\$36.17
All Aspects of New Wood Frame Work						

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	01/01/2023	\$49.45	\$12.75	\$22.74	\$0.87	\$85.81
BRICKLAYERS LOCAL 3 (FOXBORO)	07/01/2023	\$50.59	\$12.75	\$22.74	\$0.87	\$86.95
	01/01/2024	\$51.73	\$12.75	\$22.74	\$0.87	\$88.09

Apprentice - CEMENT MASONRY/PLASTERING - Foxboro

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.73	\$12.75	\$15.49	\$0.00	\$52.97
2	60	\$29.67	\$12.75	\$22.74	\$0.87	\$66.03
3	65	\$32.14	\$12.75	\$22.74	\$0.87	\$68.50
4	70	\$34.62	\$12.75	\$22.74	\$0.87	\$70.98
5	75	\$37.09	\$12.75	\$22.74	\$0.87	\$73.45
6	80	\$39.56	\$12.75	\$22.74	\$0.87	\$75.92
7	90	\$44.51	\$12.75	\$22.74	\$0.87	\$80.87

Effective Date - 07/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.30	\$12.75	\$15.49	\$0.00	\$53.54
2	60	\$30.35	\$12.75	\$22.74	\$0.87	\$66.71
3	65	\$32.88	\$12.75	\$22.74	\$0.87	\$69.24
4	70	\$35.41	\$12.75	\$22.74	\$0.87	\$71.77
5	75	\$37.94	\$12.75	\$22.74	\$0.87	\$74.30
6	80	\$40.47	\$12.75	\$22.74	\$0.87	\$76.83
7	90	\$45.53	\$12.75	\$22.74	\$0.87	\$81.89

Notes:

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

Apprentice to Journeyworker Ratio:1:3

CHAIN SAW OPERATOR	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
LABORERS - ZONE 2	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	12/01/2022	\$54.68	\$14.25	\$16.05	\$0.00	\$84.98
OPERATING ENGINEERS LOCAL 4	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"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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>	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 - 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

Effective Date - 07/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.63	\$8.65	\$0.00	\$0.00	\$37.28
2	55	\$31.49	\$8.65	\$6.27	\$0.00	\$46.41
3	60	\$34.36	\$8.65	\$6.84	\$0.00	\$49.85
4	65	\$37.22	\$8.65	\$7.41	\$0.00	\$53.28
5	70	\$40.08	\$8.65	\$19.63	\$0.00	\$68.36
6	75	\$42.95	\$8.65	\$20.20	\$0.00	\$71.80
7	80	\$45.81	\$8.65	\$20.77	\$0.00	\$75.23
8	90	\$51.53	\$8.65	\$21.91	\$0.00	\$82.09

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

DEMO: ADZEMAN <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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR <i>LABORERS - ZONE 2</i>	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 <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: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 2</i>	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: 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 1)</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 1)</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 1)</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 1)</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 223</i>	09/01/2022	\$46.35	\$11.50	\$16.18	\$0.00	\$74.03
	09/01/2023	\$47.87	\$11.75	\$16.86	\$0.00	\$76.48

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - ELECTRICIAN - Local 223
Effective Date - 09/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.54	\$11.50	\$0.56	\$0.00	\$30.60
2	45	\$20.86	\$11.50	\$0.63	\$0.00	\$32.99
3	50	\$23.18	\$11.50	\$0.70	\$0.00	\$35.38
4	55	\$25.49	\$11.50	\$7.35	\$0.00	\$44.34
5	60	\$27.81	\$11.50	\$7.86	\$0.00	\$47.17
6	65	\$30.13	\$11.50	\$8.37	\$0.00	\$50.00
7	70	\$32.45	\$11.50	\$8.89	\$0.00	\$52.84
8	75	\$34.76	\$11.50	\$9.40	\$0.00	\$55.66

Effective Date - 09/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$19.15	\$11.75	\$0.57	\$0.00	\$31.47
2	45	\$21.54	\$11.75	\$0.65	\$0.00	\$33.94
3	50	\$23.94	\$11.75	\$0.72	\$0.00	\$36.41
4	55	\$26.33	\$11.75	\$7.79	\$0.00	\$45.87
5	60	\$28.72	\$11.75	\$8.31	\$0.00	\$48.78
6	65	\$31.12	\$11.75	\$8.65	\$0.00	\$51.52
7	70	\$33.51	\$11.75	\$9.38	\$0.00	\$54.64
8	75	\$35.90	\$11.75	\$9.90	\$0.00	\$57.55

Notes:
Apprentice to Journeyworker Ratio:2:3***
ELEVATOR CONSTRUCTOR
ELEVATOR CONSTRUCTORS LOCAL 4
01/01/2022
\$65.62
\$16.03
\$20.21
\$0.00
\$101.86
Apprentice - ELEVATOR CONSTRUCTOR - Local 4
Effective Date - 01/01/2022

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

Notes:

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

Apprentice to Journeyworker Ratio:1:1
ELEVATOR CONSTRUCTOR HELPER
ELEVATOR CONSTRUCTORS LOCAL 4
01/01/2022
\$45.93
\$16.03
\$20.21
\$0.00
\$82.17

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"						
FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY)	12/01/2022	\$36.81	\$9.35	\$16.89	\$0.00	\$63.05
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	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)						
FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY	11/05/2022	\$48.67	\$14.25	\$16.05	\$0.00	\$78.97
OPERATING ENGINEERS LOCAL 4	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	11/01/2022	\$50.22	\$14.25	\$16.05	\$0.00	\$80.52
OPERATING ENGINEERS LOCAL 4	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	11/01/2022	\$24.31	\$14.25	\$16.05	\$0.00	\$54.61
OPERATING ENGINEERS LOCAL 4	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	09/01/2020	\$43.66	\$10.90	\$14.66	\$0.00	\$69.22
ELECTRICIANS LOCAL 223						
For apprentice rates see "Apprentice- ELECTRICIAN"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS</i>	09/01/2020	\$36.86	\$10.90	\$12.45	\$0.00	\$60.21
<i>LOCAL 223</i> For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
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 I</i>	03/01/2022	\$49.93	\$8.68	\$20.27	\$0.00	\$78.88

Apprentice - FLOORCOVERER - Local 2168 Zone I

Effective Date - 03/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.97	\$8.68	\$1.79	\$0.00	\$35.44
2	55	\$27.46	\$8.68	\$1.79	\$0.00	\$37.93
3	60	\$29.96	\$8.68	\$14.90	\$0.00	\$53.54
4	65	\$32.45	\$8.68	\$14.90	\$0.00	\$56.03
5	70	\$34.95	\$8.68	\$16.69	\$0.00	\$60.32
6	75	\$37.45	\$8.68	\$16.69	\$0.00	\$62.82
7	80	\$39.94	\$8.68	\$18.48	\$0.00	\$67.10
8	85	\$42.44	\$8.68	\$18.48	\$0.00	\$69.60

Notes: Steps are 750 hrs.
% After 10/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)
Step 1&2 \$32.94/ 3&4 \$39.66/ 5&6 \$60.32/ 7&8 \$67.10

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 1333</i>	06/01/2020	\$39.18	\$10.80	\$10.45	\$0.00	\$60.43

Apprentice - GLAZIER - Local 1333

Effective Date - 06/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.59	\$10.80	\$1.80	\$0.00	\$32.19
2	56	\$22.04	\$10.80	\$1.80	\$0.00	\$34.64
3	63	\$24.49	\$10.80	\$2.45	\$0.00	\$37.74
4	69	\$26.94	\$10.80	\$2.45	\$0.00	\$40.19
5	75	\$29.39	\$10.80	\$3.15	\$0.00	\$43.34
6	81	\$31.83	\$10.80	\$3.15	\$0.00	\$45.78
7	88	\$34.28	\$10.80	\$10.45	\$0.00	\$55.53
8	94	\$36.73	\$10.80	\$10.45	\$0.00	\$57.98

Notes:

Apprentice to Journeyworker Ratio:1:3

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HOISTING ENGINEER/CRANES/GRADALLS <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

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) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2023	\$55.31	\$14.11	\$26.64	\$2.83	\$98.89
	08/01/2023	\$57.01	\$14.11	\$26.64	\$2.83	\$100.59
	02/01/2024	\$58.71	\$14.11	\$26.64	\$2.83	\$102.29
	08/01/2024	\$60.46	\$14.11	\$26.64	\$2.83	\$104.04
	02/01/2025	\$62.21	\$14.11	\$26.64	\$2.83	\$105.79
	08/01/2025	\$64.06	\$14.11	\$26.64	\$2.83	\$107.64
	02/01/2026	\$66.01	\$14.11	\$26.64	\$2.83	\$109.59

For apprentice rates see "Apprentice- SHEET METAL WORKER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 223</i>	09/01/2020	\$43.66	\$10.90	\$14.66	\$0.00	\$69.22
For apprentice rates see "Apprentice- ELECTRICIAN"						
HVAC (TESTING AND BALANCING - AIR) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2023	\$55.31	\$14.11	\$26.64	\$2.83	\$98.89
	08/01/2023	\$57.01	\$14.11	\$26.64	\$2.83	\$100.59
	02/01/2024	\$58.71	\$14.11	\$26.64	\$2.83	\$102.29
	08/01/2024	\$60.46	\$14.11	\$26.64	\$2.83	\$104.04
	02/01/2025	\$62.21	\$14.11	\$26.64	\$2.83	\$105.79
	08/01/2025	\$64.06	\$14.11	\$26.64	\$2.83	\$107.64
	02/01/2026	\$66.01	\$14.11	\$26.64	\$2.83	\$109.59
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING - WATER) <i>PLUMBERS & PIPEFITTERS LOCAL 51</i>	08/30/2021	\$46.49	\$10.15	\$19.95	\$0.00	\$76.59
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PLUMBERS & PIPEFITTERS LOCAL 51</i>	08/30/2021	\$46.49	\$10.15	\$19.95	\$0.00	\$76.59
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 (SOUTHERN MASS)</i>	09/01/2022	\$48.95	\$13.80	\$17.14	\$0.00	\$79.89

Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Southern MA

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 37</i>	03/16/2021	\$42.46	\$7.70	\$17.10	\$0.00	\$67.26
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Apprentice - IRONWORKER - Local 37
Effective Date - 03/16/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	70	\$29.72	\$7.70	\$17.10	\$0.00	\$54.52
2	75	\$31.85	\$7.70	\$17.10	\$0.00	\$56.65
3	80	\$33.97	\$7.70	\$17.10	\$0.00	\$58.77
4	85	\$36.09	\$7.70	\$17.10	\$0.00	\$60.89
5	90	\$38.21	\$7.70	\$17.10	\$0.00	\$63.01
6	95	\$40.34	\$7.70	\$17.10	\$0.00	\$65.14

Notes:

Apprentice to Journeyworker Ratio:1:4

JACKHAMMER & PAVING BREAKER OPERATOR	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
LABORERS - ZONE 2	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	12/01/2022	\$37.16	\$9.10	\$16.64	\$0.00	\$62.90
LABORERS - ZONE 2	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

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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

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	12/01/2022	\$37.16	\$9.10	\$16.64	\$0.00	\$62.90
LABORERS - ZONE 2	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	12/01/2022	\$37.16	\$9.10	\$16.64	\$0.00	\$62.90
LABORERS - ZONE 2	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	12/01/2022	\$37.25	\$9.10	\$16.70	\$0.00	\$63.05
LABORERS - ZONE 2	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	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
LABORERS - ZONE 2	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"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: MASON TENDER (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)						
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>	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

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

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

Effective Date - 08/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.95	\$11.49	\$20.37	\$0.00	\$55.81
2	60	\$28.73	\$11.49	\$20.37	\$0.00	\$60.59
3	70	\$33.52	\$11.49	\$20.37	\$0.00	\$65.38
4	80	\$38.31	\$11.49	\$20.37	\$0.00	\$70.17
5	90	\$43.10	\$11.49	\$20.37	\$0.00	\$74.96

Notes:

Apprentice to Journeyworker Ratio:1:3

MARBLE MASONS,TILELAYERS & TERRAZZO MECH	02/01/2023	\$60.37	\$11.49	\$22.31	\$0.00	\$94.17
BRICKLAYERS LOCAL 3 - MARBLE & TILE	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
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Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile

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

Effective Date - 08/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.21	\$11.49	\$22.31	\$0.00	\$65.01
2	60	\$37.45	\$11.49	\$22.31	\$0.00	\$71.25
3	70	\$43.69	\$11.49	\$22.31	\$0.00	\$77.49
4	80	\$49.94	\$11.49	\$22.31	\$0.00	\$83.74
5	90	\$56.18	\$11.49	\$22.31	\$0.00	\$89.98

Notes:

Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES)	12/01/2022	\$53.05	\$14.25	\$16.05	\$0.00	\$83.35
OPERATING ENGINEERS LOCAL 4	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	12/01/2022	\$53.05	\$14.25	\$16.05	\$0.00	\$83.35
OPERATING ENGINEERS LOCAL 4	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)	01/02/2023	\$41.92	\$8.58	\$21.57	\$0.00	\$72.07
MILLWRIGHTS LOCAL 1121 - Zone 2						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate	
Apprentice - MILLWRIGHT - Local 1121 Zone 2							
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	
<div>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</div>							
Apprentice to Journeyworker Ratio:1:4							
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MORTAR MIXER		12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
LABORERS - ZONE 2		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"							
<hr/>							
OILER (OTHER THAN TRUCK CRANES,GRADALLS)		12/01/2022	\$24.37	\$14.25	\$16.05	\$0.00	\$54.67
OPERATING ENGINEERS LOCAL 4		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"							
<hr/>							
OILER (TRUCK CRANES, GRADALLS)		12/01/2022	\$29.57	\$14.25	\$16.05	\$0.00	\$59.87
OPERATING ENGINEERS LOCAL 4		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"							
<hr/>							
OTHER POWER DRIVEN EQUIPMENT - CLASS II		12/01/2022	\$53.05	\$14.25	\$16.05	\$0.00	\$83.35
OPERATING ENGINEERS LOCAL 4		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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PAINTER (BRIDGES/TANKS)	01/01/2023	\$56.06	\$8.65	\$23.05	\$0.00	\$87.76
PAINTERS LOCAL 35 - ZONE 2	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 - 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

Effective Date - 07/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.63	\$8.65	\$0.00	\$0.00	\$37.28
2	55	\$31.49	\$8.65	\$6.27	\$0.00	\$46.41
3	60	\$34.36	\$8.65	\$6.84	\$0.00	\$49.85
4	65	\$37.22	\$8.65	\$7.41	\$0.00	\$53.28
5	70	\$40.08	\$8.65	\$19.63	\$0.00	\$68.36
6	75	\$42.95	\$8.65	\$20.20	\$0.00	\$71.80
7	80	\$45.81	\$8.65	\$20.77	\$0.00	\$75.23
8	90	\$51.53	\$8.65	\$21.91	\$0.00	\$82.09

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *	01/01/2023	\$46.96	\$8.65	\$23.05	\$0.00	\$78.66
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	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 - 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

Effective Date - 07/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.08	\$8.65	\$0.00	\$0.00	\$32.73
2	55	\$26.49	\$8.65	\$6.27	\$0.00	\$41.41
3	60	\$28.90	\$8.65	\$6.84	\$0.00	\$44.39
4	65	\$31.30	\$8.65	\$7.41	\$0.00	\$47.36
5	70	\$33.71	\$8.65	\$19.63	\$0.00	\$61.99
6	75	\$36.12	\$8.65	\$20.20	\$0.00	\$64.97
7	80	\$38.53	\$8.65	\$20.77	\$0.00	\$67.95
8	90	\$43.34	\$8.65	\$21.91	\$0.00	\$73.90

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT)	01/01/2023	\$45.02	\$8.65	\$23.05	\$0.00	\$76.72
PAINTERS LOCAL 35 - ZONE 2	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

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

Effective Date - 07/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.11	\$8.65	\$0.00	\$0.00	\$31.76
2	55	\$25.42	\$8.65	\$6.27	\$0.00	\$40.34
3	60	\$27.73	\$8.65	\$6.84	\$0.00	\$43.22
4	65	\$30.04	\$8.65	\$19.06	\$0.00	\$57.75
5	70	\$32.35	\$8.65	\$19.63	\$0.00	\$60.63
6	75	\$34.67	\$8.65	\$20.20	\$0.00	\$63.52
7	80	\$36.98	\$8.65	\$20.77	\$0.00	\$66.40
8	90	\$41.60	\$8.65	\$21.91	\$0.00	\$72.16

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, NEW) *

* 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 - 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

Effective Date - 07/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.38	\$8.65	\$0.00	\$0.00	\$32.03
2	55	\$25.72	\$8.65	\$6.27	\$0.00	\$40.64
3	60	\$28.06	\$8.65	\$6.84	\$0.00	\$43.55
4	65	\$30.39	\$8.65	\$7.41	\$0.00	\$46.45
5	70	\$32.73	\$8.65	\$19.63	\$0.00	\$61.01
6	75	\$35.07	\$8.65	\$20.20	\$0.00	\$63.92
7	80	\$37.41	\$8.65	\$20.77	\$0.00	\$66.83
8	90	\$42.08	\$8.65	\$21.91	\$0.00	\$72.64

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)

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
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Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT

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

Effective Date - 07/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.41	\$8.65	\$0.00	\$0.00	\$31.06
2	55	\$24.65	\$8.65	\$6.27	\$0.00	\$39.57
3	60	\$26.89	\$8.65	\$6.84	\$0.00	\$42.38
4	65	\$29.13	\$8.65	\$7.41	\$0.00	\$45.19
5	70	\$31.37	\$8.65	\$19.63	\$0.00	\$59.65
6	75	\$33.62	\$8.65	\$20.20	\$0.00	\$62.47
7	80	\$35.86	\$8.65	\$20.77	\$0.00	\$65.28
8	90	\$40.34	\$8.65	\$21.91	\$0.00	\$70.90

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	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59
PILE DRIVER LOCAL 56 (ZONE 1)						
For apprentice rates see "Apprentice- PILE DRIVER"						
PILE DRIVER	08/01/2020	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59
PILE DRIVER LOCAL 56 (ZONE 1)						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - PILE DRIVER - Local 56 Zone 1

Effective Date - 08/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.54	\$9.40	\$23.12	\$0.00	\$57.06
2	60	\$29.44	\$9.40	\$23.12	\$0.00	\$61.96
3	70	\$34.35	\$9.40	\$23.12	\$0.00	\$66.87
4	75	\$36.80	\$9.40	\$23.12	\$0.00	\$69.32
5	80	\$39.26	\$9.40	\$23.12	\$0.00	\$71.78
6	80	\$39.26	\$9.40	\$23.12	\$0.00	\$71.78
7	90	\$44.16	\$9.40	\$23.12	\$0.00	\$76.68
8	90	\$44.16	\$9.40	\$23.12	\$0.00	\$76.68

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
Step 1&2 \$34.01/ 3&4 \$41.46/ 5&6 \$62.80/ 7&8 \$69.25

Apprentice to Journeyworker Ratio:1:5

PIPELAYER	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
LABORERS - ZONE 2	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)	12/01/2022	\$36.81	\$9.35	\$16.89	\$0.00	\$63.05
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	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	08/30/2021	\$46.49	\$10.15	\$19.95	\$0.00	\$76.59
PLUMBERS & PIPEFITTERS LOCAL 51						

Classification		Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Apprentice - PLUMBER/PIPEFITTER - Local 51							
Effective Date - 08/30/2021							
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate	
1	40	\$18.60	\$10.15	\$2.50	\$0.00	\$31.25	
2	50	\$23.25	\$10.15	\$2.50	\$0.00	\$35.90	
3	60	\$27.89	\$10.15	\$8.80	\$0.00	\$46.84	
4	70	\$32.54	\$10.15	\$14.08	\$0.00	\$56.77	
5	80	\$37.19	\$10.15	\$17.60	\$0.00	\$64.94	
<div>Notes: Steps 2000hrs. Prior 9/1/05; 40/40/45/50/55/60/65/75/80/85</div>							
Apprentice to Journeyworker Ratio:1:3							
PNEUMATIC CONTROLS (TEMP.) <i>PLUMBERS & PIPEFITTERS LOCAL 51</i>		08/30/2021	\$46.49	\$10.15	\$19.95	\$0.00	\$76.59
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)"							
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)"							

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 170 - Dauphinais (Bellingham)</i>	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"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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.Roofers Waterproofing &Roofers Damproofg) <i>ROOFERS LOCAL 33</i>	02/01/2023	\$48.53	\$12.78	\$20.20	\$0.00	\$81.51
	08/01/2023	\$50.03	\$12.78	\$20.20	\$0.00	\$83.01
	02/01/2024	\$51.28	\$12.78	\$20.20	\$0.00	\$84.26
	08/01/2024	\$52.78	\$12.78	\$20.20	\$0.00	\$85.76
	02/01/2025	\$54.03	\$12.78	\$20.20	\$0.00	\$87.01
	08/01/2025	\$55.53	\$12.78	\$20.20	\$0.00	\$88.51
	02/01/2026	\$56.78	\$12.78	\$20.20	\$0.00	\$89.76

Apprentice - ROOFER - Local 33

Effective Date - 02/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.27	\$12.78	\$5.59	\$0.00	\$42.64
2	60	\$29.12	\$12.78	\$20.20	\$0.00	\$62.10
3	65	\$31.54	\$12.78	\$20.20	\$0.00	\$64.52
4	75	\$36.40	\$12.78	\$20.20	\$0.00	\$69.38
5	85	\$41.25	\$12.78	\$20.20	\$0.00	\$74.23

Effective Date - 08/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.02	\$12.78	\$5.59	\$0.00	\$43.39
2	60	\$30.02	\$12.78	\$20.20	\$0.00	\$63.00
3	65	\$32.52	\$12.78	\$20.20	\$0.00	\$65.50
4	75	\$37.52	\$12.78	\$20.20	\$0.00	\$70.50
5	85	\$42.53	\$12.78	\$20.20	\$0.00	\$75.51

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:**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ROOFER SLATE / TILE / PRECAST CONCRETE <i>ROOFERS LOCAL 33</i>	02/01/2023	\$48.78	\$12.78	\$20.20	\$0.00	\$81.76
	08/01/2023	\$50.28	\$12.78	\$20.20	\$0.00	\$83.26
	02/01/2024	\$51.53	\$12.78	\$20.20	\$0.00	\$84.51
	08/01/2024	\$53.03	\$12.78	\$20.20	\$0.00	\$86.01
	02/01/2025	\$54.28	\$12.78	\$20.20	\$0.00	\$87.26
	08/01/2025	\$55.78	\$12.78	\$20.20	\$0.00	\$88.76
	02/01/2026	\$57.03	\$12.78	\$20.20	\$0.00	\$90.01
For apprentice rates see "Apprentice- ROOFER"						
SHEETMETAL WORKER <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2023	\$55.31	\$14.11	\$26.64	\$2.83	\$98.89
	08/01/2023	\$57.01	\$14.11	\$26.64	\$2.83	\$100.59
	02/01/2024	\$58.71	\$14.11	\$26.64	\$2.83	\$102.29
	08/01/2024	\$60.46	\$14.11	\$26.64	\$2.83	\$104.04
	02/01/2025	\$62.21	\$14.11	\$26.64	\$2.83	\$105.79
	08/01/2025	\$64.06	\$14.11	\$26.64	\$2.83	\$107.64
	02/01/2026	\$66.01	\$14.11	\$26.64	\$2.83	\$109.59

Apprentice - SHEET METAL WORKER - Local 17-A**Effective Date - 02/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	42	\$23.23	\$14.11	\$6.13	\$0.00	\$43.47
2	42	\$23.23	\$14.11	\$6.13	\$0.00	\$43.47
3	47	\$26.00	\$14.11	\$11.90	\$1.54	\$53.55
4	47	\$26.00	\$14.11	\$11.90	\$1.54	\$53.55
5	52	\$28.76	\$14.11	\$12.88	\$1.65	\$57.40
6	52	\$28.76	\$14.11	\$13.13	\$1.65	\$57.65
7	60	\$33.19	\$14.11	\$14.54	\$1.83	\$63.67
8	65	\$35.95	\$14.11	\$15.52	\$1.94	\$67.52
9	75	\$41.48	\$14.11	\$17.48	\$2.16	\$75.23
10	85	\$47.01	\$14.11	\$18.94	\$2.36	\$82.42

Effective Date - 08/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	42	\$23.94	\$14.11	\$6.13	\$0.00	\$44.18
2	42	\$23.94	\$14.11	\$6.13	\$0.00	\$44.18
3	47	\$26.79	\$14.11	\$11.90	\$1.58	\$54.38
4	47	\$26.79	\$14.11	\$11.90	\$1.58	\$54.38
5	52	\$29.65	\$14.11	\$12.88	\$1.70	\$58.34
6	52	\$29.65	\$14.11	\$13.13	\$1.70	\$58.59
7	60	\$34.21	\$14.11	\$14.54	\$1.89	\$64.75
8	65	\$37.06	\$14.11	\$15.52	\$2.00	\$68.69
9	75	\$42.76	\$14.11	\$17.48	\$2.23	\$76.58
10	85	\$48.46	\$14.11	\$18.94	\$2.45	\$83.96

Notes:

Steps are 6 mos.

Apprentice to Journeyworker Ratio:1:4

SPECIALIZED EARTH MOVING EQUIP < 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/01/2021	\$36.24	\$13.41	\$16.01	\$0.00	\$65.66
SPECIALIZED EARTH MOVING EQUIP > 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/01/2021	\$36.53	\$13.41	\$16.01	\$0.00	\$65.95
SPRINKLER FITTER SPRINKLER FITTERS LOCAL 550 - (Section A) Zone 1	03/01/2023	\$66.20	\$10.90	\$23.20	\$0.00	\$100.30
	10/01/2023	\$67.95	\$10.90	\$23.20	\$0.00	\$102.05
	03/01/2024	\$69.75	\$10.90	\$23.20	\$0.00	\$103.85
	10/01/2024	\$71.55	\$10.90	\$23.20	\$0.00	\$105.65
	03/01/2025	\$73.35	\$10.90	\$23.20	\$0.00	\$107.45

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - SPRINKLER FITTER - Local 550 (Section A) Zone 1
Effective Date - 03/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$23.17	\$10.90	\$9.70	\$0.00	\$43.77
2	40	\$26.48	\$10.90	\$9.70	\$0.00	\$47.08
3	45	\$29.79	\$10.90	\$9.70	\$0.00	\$50.39
4	50	\$33.10	\$10.90	\$9.70	\$0.00	\$53.70
5	55	\$36.41	\$10.90	\$9.70	\$0.00	\$57.01
6	60	\$39.72	\$10.90	\$11.20	\$0.00	\$61.82
7	65	\$43.03	\$10.90	\$11.20	\$0.00	\$65.13
8	70	\$46.34	\$10.90	\$11.20	\$0.00	\$68.44
9	75	\$49.65	\$10.90	\$11.20	\$0.00	\$71.75
10	80	\$52.96	\$10.90	\$11.20	\$0.00	\$75.06

Effective Date - 10/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$23.78	\$10.90	\$9.70	\$0.00	\$44.38
2	40	\$27.18	\$10.90	\$9.70	\$0.00	\$47.78
3	45	\$30.58	\$10.90	\$9.70	\$0.00	\$51.18
4	50	\$33.98	\$10.90	\$9.70	\$0.00	\$54.58
5	55	\$37.37	\$10.90	\$9.70	\$0.00	\$57.97
6	60	\$40.77	\$10.90	\$11.20	\$0.00	\$62.87
7	65	\$44.17	\$10.90	\$11.20	\$0.00	\$66.27
8	70	\$47.57	\$10.90	\$11.20	\$0.00	\$69.67
9	75	\$50.96	\$10.90	\$11.20	\$0.00	\$73.06
10	80	\$54.36	\$10.90	\$11.20	\$0.00	\$76.46

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"

TELECOMMUNICATION TECHNICIAN <i>ELECTRICIANS LOCAL 223</i>	09/01/2022	\$38.16	\$11.25	\$13.31	\$0.00	\$62.72
	09/01/2023	\$39.40	\$11.50	\$13.91	\$0.00	\$64.81
	09/01/2024	\$40.69	\$11.75	\$14.53	\$0.00	\$66.97

Apprentice - TELECOMMUNICATION TECHNICIAN - Local 223

Effective Date - 09/01/2022

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

Notes: See Electrician Apprentice Wages

Telecom Apprentice Wages shall be the same as the Electrician Apprentice Wages

Apprentice to Journeyworker Ratio:2:3***

TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	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 - 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

Effective Date - 08/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.67	\$11.49	\$22.34	\$0.00	\$64.50
2	60	\$36.80	\$11.49	\$22.34	\$0.00	\$70.63
3	70	\$42.94	\$11.49	\$22.34	\$0.00	\$76.77
4	80	\$49.07	\$11.49	\$22.34	\$0.00	\$82.90
5	90	\$55.21	\$11.49	\$22.34	\$0.00	\$89.04

Notes:

Apprentice to Journeyworker Ratio:1:3

TEST BORING DRILLER	12/01/2022	\$46.58	\$9.35	\$17.97	\$0.00	\$73.90
LABORERS - FOUNDATION AND MARINE	06/01/2023	\$47.58	\$9.35	\$17.97	\$0.00	\$74.90
	12/01/2023	\$48.83	\$9.35	\$17.97	\$0.00	\$76.15
	06/01/2024	\$50.31	\$9.35	\$17.97	\$0.00	\$77.63
	12/01/2024	\$51.78	\$9.35	\$17.97	\$0.00	\$79.10
	06/01/2025	\$53.28	\$9.35	\$17.97	\$0.00	\$80.60
	12/01/2025	\$54.78	\$9.35	\$17.97	\$0.00	\$82.10
	06/01/2026	\$56.33	\$9.35	\$17.97	\$0.00	\$83.65
	12/01/2026	\$57.83	\$9.35	\$17.97	\$0.00	\$85.15
For apprentice rates see "Apprentice- LABORER"						
TEST BORING DRILLER HELPER	12/01/2022	\$42.70	\$9.35	\$17.97	\$0.00	\$70.02
LABORERS - FOUNDATION AND MARINE	06/01/2023	\$43.70	\$9.35	\$17.97	\$0.00	\$71.02
	12/01/2023	\$44.95	\$9.35	\$17.97	\$0.00	\$72.27
	06/01/2024	\$46.43	\$9.35	\$17.97	\$0.00	\$73.75
	12/01/2024	\$47.90	\$9.35	\$17.97	\$0.00	\$75.22
	06/01/2025	\$49.40	\$9.35	\$17.97	\$0.00	\$76.72
	12/01/2025	\$50.90	\$9.35	\$17.97	\$0.00	\$78.22
	06/01/2026	\$52.45	\$9.35	\$17.97	\$0.00	\$79.77
	12/01/2026	\$53.95	\$9.35	\$17.97	\$0.00	\$81.27
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2022	\$42.58	\$9.35	\$17.97	\$0.00	\$69.90
	06/01/2023	\$43.58	\$9.35	\$17.97	\$0.00	\$70.90
	12/01/2023	\$44.83	\$9.35	\$17.97	\$0.00	\$72.15
	06/01/2024	\$46.31	\$9.35	\$17.97	\$0.00	\$73.63
	12/01/2024	\$47.78	\$9.35	\$17.97	\$0.00	\$75.10
	06/01/2025	\$49.28	\$9.35	\$17.97	\$0.00	\$76.60
	12/01/2025	\$50.78	\$9.35	\$17.97	\$0.00	\$78.10
	06/01/2026	\$52.33	\$9.35	\$17.97	\$0.00	\$79.65
	12/01/2026	\$53.83	\$9.35	\$17.97	\$0.00	\$81.15
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"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	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 <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2021	\$36.24	\$13.41	\$16.01	\$0.00	\$65.66
WAGON DRILL 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"						
WAGON DRILL 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)"						
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"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
WATER METER INSTALLER <i>PLUMBERS & PIPEFITTERS LOCAL 51</i>	08/30/2021	\$46.49	\$10.15	\$19.95	\$0.00	\$76.59
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						

Additional Apprenticeship 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.

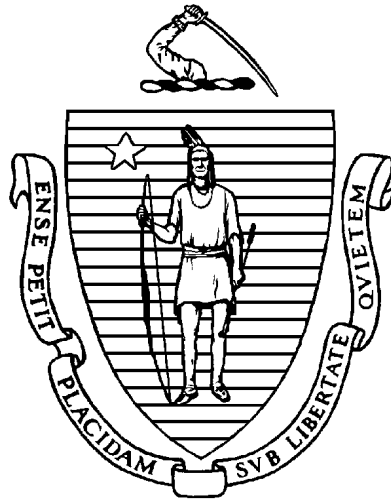
**** APP to JM; 1:1, 1:2, 2:3, 2:4, 3:5, 4:6, 4:7, 5:8, 6:9, 6:10, 7:11, 8:12, 8:13, 9:14, 10:15, 10:16, etc.

ATTACHMENT B:

Form and Checklists Used For General Bids

- 1) Form for General Bid
- 2) General Bidder Check list
- 3) General Bidder Documents to Upload into COMMBUYS Checklist

**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
Telephone: (857) 274-1048**



**COMMONWEALTH OF MASSACHUSETTS
FORM FOR GENERAL BID**

**2021-052 Inpatient Bathroom Renovations - Cain Building
Taunton State Hospital
60 Hodges Ave.
Taunton, MA 02780**

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. Complete Statement of Prior Relevant Experience, Facilities, Equipment, References and any other information called for as further set forth in Project Specifications.

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: **2021-052 Inpatient Bathroom Renovations - Cain Building - Taunton State**

Hospital 60 Hodges Avenue, Taunton, MA 02780, in accordance with the accompanying plans

and specifications prepared by DMH Engineering and Coneco Engineers, Scientists, and

Surveyors 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 subdivision of the proposed contract price is as follows:

Item 1. The work of the general contractor, being all work other than that covered by the sub-bidders in Item 2.

Item 2. Sub-bids as follows:

Section #	Subtrade	Name of Sub-Bidder	Amount	Bonds required, indicated by "Yes" or "No"

Total Item 2: _____

E. 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 100% performance bond and a 100% payment bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the awarding authority and each in the sum of the contract price, the premiums for which are to be paid by the general contractor and are included in the contract price.

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.
5. 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 Signing Bid)

By _____
(Signed Name of Person & Title Signing Bid)

(Business Address, City, State)

(Telephone Number)

(Facsimile Number and email 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.

GENERAL 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!

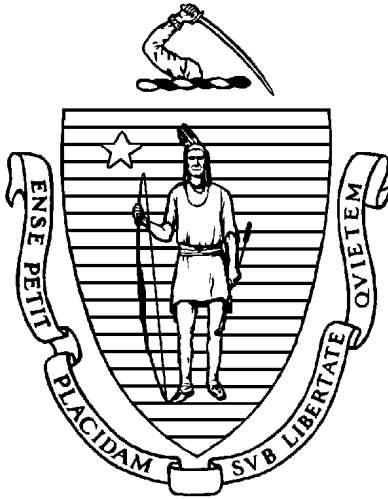
GENERAL BIDDER DOCUMENTS TO UPLOAD TO COMMBUYS CHECKLIST

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

ATTACHMENT C: Form and Checklists Used For Sub Bids

- 1) Form for Sub Bid
- 2) Sub Bid Checklist
- 3) Sub Bidder Documents to Upload into COMMBUYS Checklist

**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
Telephone: (857) 274-1048**



COMMONWEALTH OF MASSACHUSETTS FORM FOR SUB-BID

**2021-052 Inpatient Bathroom Renovations - Cain Building
Taunton State Hospital
60 Hodges Ave.
Taunton, MA 02780**

FORM FOR SUB BID

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

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

Section No. _____ Sub trade: _____

Project Name: **2021-052 Inpatient Bathroom Renovations - Cain Building - Taunton State Hospital, 60 Hodges Avenue, Taunton, Massachusetts 02780**, in accordance with the accompanying plans and specifications prepared by DMH Engineering and Coneco Engineers, Scientists, and Surveyors, for the contract price specified below, subject to additions and deductions according to the terms of the specifications.

B. 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 \$ _____

C. This sub-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

Name of Sub Bidder: _____

D. This sub-bid

☐ May be used by any general bidder except:

☐ May only be used by the following general bidders:

(To exclude general bidders, insert "X" in one box only and fill in blank following that box. Do not answer C if no general bidders are excluded.)

E. The undersigned agrees that, if he is selected as a sub-bidder, he will, within five days, Saturdays, Sundays, and legal holidays excluded, after presentation of a subcontract by the general bidder selected as the general Contractor, execute with such general bidder a subcontract in accordance with the terms of this sub-bid, and contingent upon the execution of the general contract, and if requested so to do in the general bid by such general bidder, who shall pay the premiums therefore, furnish a performance and payment bond of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the awarding authority in the full sum of the subcontract Price.

F. The names of all persons, firms and corporations furnishing to the undersigned labor or labor and materials for the class or classes or part thereof of work for which the provisions of the section of the Specifications for this sub-trade require a listing in this paragraph, including the undersigned if customarily furnished by persons on his own payroll and in the absence of a contrary provision in the Specifications, the name of each such class of work or part thereto and the bid price for such class of work or part thereof are:

NAME	CLASS OF WORK	BID PRICE

(Do not give bid price for any class or part thereof furnished by undersigned).

G. The undersigned agrees that the above list of bids to the undersigned represents bona fide bids based on the hereinbefore described Plans, Specifications and addenda and that, if the undersigned is awarded the contract, they will be used for the work indicated at the amounts stated, if satisfactory to the awarding authority.

H. The undersigned further agrees to be bound to the general Contractor by the terms of the hereinbefore describe Plans, Specifications, including all general conditions stated therein, and addenda, and to assume toward him all the obligations and responsibilities that he, by those documents, assumes toward the Commonwealth.

I. The undersigned offers the following information as evidence of his qualifications to perform the work as bid upon according to all the requirements of the Plans and specification:

1. Have been in business under present business name _____ years.
2. Ever failed to complete any work awarded? _____.
3. List one or more recent buildings with names of the general Contractor and Designer on which you served as a subcontractor for work of similar character as required for the above named building.

BUILDING	DESIGNER	GENERAL CONTRACTOR	AMOUNT OF CONTRACT

- J. The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work and that he will comply fully with all laws and regulations applicable to awards of subcontracts subject to M.G.L. c. 149, sec. forty-four F.

The undersigned further certifies under penalties of perjury that his sub-bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the work “person” shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

The undersigned further certifies under penalties 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 Massachusetts General Laws or any rule or regulation promulgated thereunder. **Please print and /or sign the following requested information.**

Date: _____

By (Name of Sub-Bidder): _____

Signature of Sub-Bidder: _____

Business Name: _____

Business Address: _____

Business Telephone Number: _____

Business FAX Telephone Number: _____

Email Address : _____

SUB 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.

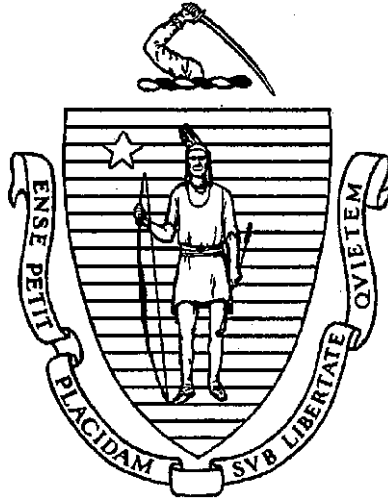
*****Please note that all SUB BID documents must be uploaded into COMMBUYS*****

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 Sub Bid form provided in Attachment C to the Instructions to Bidders?
- ☐ 2. Have you properly identified the project, architect, etc., on your Sub 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 Sub 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 Sub Bid Form SIGNED and dated?**
- 12. **SUB BID DEPOSITS**
 - ☐ a. **Have you uploaded your SUB Bid Deposit onto COMMBUYS and FEDEXed your original Sub Bid Bond to arrive prior to the bid opening date?**
 - ☐ b. Is your Sub Bid deposit, if in the form of a Sub 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 Sub Bid deposit made payable to the Commonwealth of Massachusetts? **Sub Bid deposits made payable to any other entity may cause the Sub Bid to be rejected.**
 - ☐ d. Is your Sub 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 Sub Bid materials **uploaded into COMMBUYS** exactly as provided in the Instructions to Bidders?
- ☐ 16. Your Sub Bid **MUST** be **uploaded into COMMBUYS** prior to the deadline!

SUB BIDDER DOCUMENTS TO UPLOAD INTO COMMBUYS CHECKLIST

- ☐ 1. SUB BID FORM (PART 1 Attachment C)
- ☐ 2. WAGE RATES ACKNOWLEDGEMENT (PART 1 ATTACHMENT A)
(Complete the bottom of Attachment A in this Part 1 packet.)
- ☐ 3. 5% BID BOND
- ☐ 4. SUB CONTRACTOR - DCAMM UPDATE STATEMENT (NOT APPLICABLE)
- ☐ 5. SUB CONTRACTOR - DCAMM CERTIFICATE OF ELIGIBILITY (NOT APPLICABLE)



BID PACKAGE

PART II

Forms for Contract Execution

- Form for Subcontract - M.G.L. c.149, s. 44F
- Executive Order 481
- Executive Order 504 (2 pages)
- Owner- Contractor Agreement
- 100 % Payment Bond
- 100 % Performance Bond
- Prompt Payment Discount
- Certificate of Corporate Vote
- 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**

Contract #

**COMMONWEALTH OF MASSACHUSETTS
FORM FOR SUBCONTRACT – MGL, c. 149, s. 44F**

THIS AGREEMENT made this _____ day of _____, 20____, by and between

_____ a corporation organized and existing under the law of _____

_____ an individual doing business as _____ hereinafter called the "Contractor" and _____

_____ a corporation organized and existing under the laws of _____

_____ a partnership consisting of _____ an individual doing business as _____ hereinafter called a "Subcontractor,"

WITNESSETH that the Contractor and the Subcontractor for the considerations hereafter named, agree as follows:

1. The Subcontractor agrees to furnish all labor and materials required for the completion of all work specified in Section No. _____ of the Specifications for _____

(Name of Sub-trade)

and the Plans referred to therein and addenda No. _____, _____, _____ and _____ for the _____

(complete title of project and project no. taken from the title page of the Specifications)

all as prepared by _____

(Name of Architect or Engineer)

for the sum of _____ (\$ _____)

and the Contractor agrees to pay the Subcontractor said sum for said work. This price includes the following alternates (and other items set forth in the sub-bid):

Alternate No(s) _____, _____, _____, _____, _____, _____.

(a) The Subcontractor agrees to be bound to the Contractor by the terms of the hereinbefore described Plans, Specifications (including all general conditions stated therein) and addenda No. _____, and _____, and _____, and to assume to the Contractor all the obligations and responsibilities that the Contractor by those documents assumes to the _____ hereinafter

(Awarding Authority)

called the "Awarding Authority," except to the extent that provisions contained therein by their terms or by law applicable only to the Contractor.

(b) The Contractor agrees to be bound to the Subcontractor by the terms of the hereinbefore described documents and to assume to the Subcontractor all the obligations and responsibilities that the Awarding Authority by the terms of the hereinbefore described documents assumes to the Contractor, except to the extent that provisions contained therein are by their terms or by law applicable only to the Awarding Authority.

2. The Contractor agrees to begin, prosecute and complete the entire work specified by the Awarding Authority in an orderly manner so that the Subcontractor will be able to begin, prosecute and complete the work described in this subcontract; and, in consideration thereof, upon notice from the Contractor, either oral or in writing, the Subcontractor agrees to begin, prosecute and complete the work described in this Subcontract in an orderly manner and with due consideration to the date or time specified by the Awarding Authority for the completion of the entire work.

3. The Subcontractor agrees to furnish to the Contractor within a reasonable time after the execution of this subcontract, evidence of workers' compensation insurance as required by law and evidence of public liability and property damage insurance of the type and in limits required to be furnished to the Awarding Authority by the Contractor.

4. The Contractor agrees that no claim for services rendered or materials furnished by the Contractor to the Subcontractor shall be valid unless written notice thereof is given by the Contractor to the Subcontractor during the first ten (10) days of the calendar month following that in which the claim originated.

5. This agreement is contingent upon the execution of a general Contract between the Contractor and the Awarding Authority for the complete work.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the date and year first above written.

SEAL ATTEST

(Name of Subcontractor)

By: _____

SEAL ATTEST

(Name of Contractor)

By: _____

Issued March
2007

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.

Contractor Authorizing Signature

Date: _____

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.



**COMMONWEALTH OF MASSACHUSETTS
STANDARD VERTICAL CONSTRUCTION CONTRACT
For Projects Over \$150,000 Subject to M.G.L. c. 149, §§ 44A -F**

OWNER - CONTRACTOR AGREEMENT

Awarding Authority: **DEPARTMENT OF MENTAL HEALTH (DMH)**
Awarding Authority Address: **167 Lyman Street, Westborough, MA 01581**
Department Code: **DMH**

This Owner-Contractor agreement ("Contract") is made as of the _____ day of _____, **2023**, by and between the Commonwealth of Massachusetts acting by and through the awarding authority identified above ("Awarding Authority") and _____, a Contractor with a principal place of business at _____, hereinafter called the "Contractor."

Terms used in this Contract which are defined in the General Conditions of the Contract ("General Conditions") attached hereto 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 **Inpatient Bathroom Renovations - Cain Building - Taunton State Hospital 60 Hodges Avenue Taunton, MA 02780 DMH Project No. 2021-052** and Contract No. _____, in accordance with and as described in the Drawings and Specifications dated **March 6, 2023**, prepared by **DMH Engineering and Coneco Engineers, Scientists, and Surveyors ("Designer")**, as modified by Addenda Nos. _____ dated _____.

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, within **one hundred twenty (120) calendar days** after such date, bring the Work to Substantial Completion and to the point at which a Certificate of Substantial Completion may be issued. The Contractor shall bring the Work to Final Acceptance within 45 days after the date specified for Substantial Completion. Liquidated damages for this Project shall be assess as set forth Article VI of the General Conditions of the Contract. The agreed liquidated damages amounts shall be **\$500.00 per day** for each calendar day of delay in achieving Substantial Completion.

Article 3. Contract Price. The Awarding Authority shall pay the Contractor, in current funds, for the proper performance of the Contract and completion of the Work, subject to additions and deductions by Approved Change Order(s), the Contract Price of _____ dollars (\$_____). The unit prices, if any, approved by the Awarding Authority are those included in the Contractor's General Bid. The following alternates have been accepted and their costs are included in the Contract Price:

Alternate No(s): N/A

Article 4. Approved Subcontractors. The filed Subcontractors listed in the General Bid submitted by the Contractor have been approved for the performance of the specified portions of the Work subject to the Commonwealth's verification that they have complied with state corporation and partnership registration laws. No other filed Subcontractors and no non-filed Subcontractors shall be used for these or any other portions of the Work without the prior written Approval of the Awarding Authority.

Article 5. Certifications. Pursuant to M.G.L. c. 62(c), § 49(a), the individual signing this Contract on behalf of the Contractor hereby certifies under the penalties of perjury that to the best of his or her knowledge and belief the Contractor has complied with any and all applicable state and federal tax laws. The individual signing this Contract on behalf of the Contractor further certifies under penalties of perjury that the Contractor is not presently debarred from doing public construction work in the Commonwealth under the provisions of M.G.L. c. 29, § 29F, or any other applicable debarment provisions of any other chapter of the Massachusetts General Laws or any rule or regulation promulgated thereunder and is not presently debarred from doing public construction work by any agency of the United States.

Article 6. The Contract Documents. The following documents form the Contract, are incorporated by reference herein, and are referred to as the "Contract Documents:"

- The instructions to bidders included in the bid documents issued by the Awarding Authority for this Project;
- The General Bid submitted by the Contractor;
- This Contract;
- The General Conditions of the Contract;
- The Drawings and Specifications prepared by the Designer, including addenda thereto identified in Article 1 above; and
- All Approved Change Orders/Contract Modifications issued after execution of this Contract

Article 7. Minority Business Enterprise and Women Business Enterprise Participation Goals and Minority/Women Workforce Utilization Percentages. The applicable goals, if any, for minority business enterprise and woman business enterprise participation established for this Contract are as follows:

The separate Minority Business Enterprise and Women Business Enterprise (MBE & WBE) participation goals for this Contract are 0 % MBE and 0 % WBE of the Contract Price.

The applicable minority workforce utilization percentage is 0%.

The applicable women workforce utilization percentage is 0%.

Article 7A. Veteran-Owned Business Enterprises Benchmark and Other Participation. The Commonwealth encourages and monitors the participation of service-disabled veteran-owned business enterprises (SDVOBE) and veteran business enterprises (VBE) on its construction projects. The benchmark for SDVOBE and VBE participation on the project is 0%. 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. Please note that only firms SDO certified as MBE or WBEs can be credited toward meeting project MBE or WBE goals.

Article 8. Additional Insurance Provisions. The insurance requirements set forth in Article XIV 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 under seal as of the date set forth above.

CONTRACTOR:

Name (Signed): _____

Name (Printed): _____

Title: _____

Date: _____

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 this Contract is executed in accordance with a prior approval of the Division of Capital Asset Management and Maintenance, and further certifies under the penalties of perjury that all the applicable provisions of M.G.L. c.149, § 44J, have been complied with.

Name (Signed): _____

Name (Printed): _____

Title: _____

Date: _____

EXHIBIT A to the Owner-Contractor Agreement

Additional Insurance Provisions

NONE.

EXHIBIT B to the Owner-Contractor Agreement

Forms Used During Contract Award and Execution

- Form for Subcontract – M.G.L. c. 149, s.44F
- Executive Orders 481 & 504 Contractor Certifications
- 100% Payment Bond
- 100% Performance Bond
- Certificate of Corporate Vote
- Intent to Award and Notice to Proceed Letters
- 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
- Notice To Proceed (Letter to Proceed)
- Any other document/form not listed here that DMH needs the Contractor to complete

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____.

(Seal)
(Print Name of General Contractor)

(Seal)
(Print Name of Surety)

By _____
(Signature - Title)

(Signature - Title)

Surety Address _____

PERFORMANCE 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 well and
truly keep and perform all the undertakings, covenants, agreements, terms and conditions
of said Contract and any extensions thereof that may be granted by the Commonwealth,
with or without notice to the surety, and during the life of any guarantee required under
the Contract, and shall also well and truly keep and perform all the undertakings,
covenants, agreements, terms and conditions of any and all duly authorized
modifications, alterations, changes or additions to said Contract that may hereafter be
made, notice to the surety of such modifications, alterations, changes or additions being
hereby waived, then this obligation shall become null and void; otherwise it shall remain
in full force and virtue.

In the event that the Contract is abandoned by the Contractor, or is terminated by
the Commonwealth under the provisions of said Contract, said surety shall, if requested
in writing by the Commonwealth, take such action as is necessary to complete the
Contract.

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

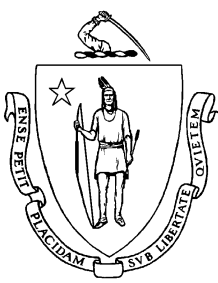
(Print Name of General Contractor) (Seal)

(Print Name of Surety) (Seal)

BY _____
(Signature - Title)

BY _____
(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 CORPORATE VOTE

_____ 20 _____

I hereby certify that I am the _____ clerk, _____, assistant clerk, of
_____ (the "Corporation") and that at a
(Name of Corporation)
duly authorized meeting of the Board of Directors of the Corporation held on
_____ in _____ at which a quorum was
(Date) (Location)

present and voting it was voted to authorize _____
(Name)
_____ of the Corporation to execute
(Officer Title)

and deliver on behalf of the Corporation the following contract and to act as principal to
execute bonds in connection therewith, which contract and bonds were presented to and
made a part of the records of said meeting:

Mass State Project No. _____

Project Title: _____

I further certify that _____ is the duly qualified and acting
(Name of Corporate Officer)

_____ of the Corporation and that said vote has not been
(Officer Title)
repealed, rescinded or amended.

Name

Date

(CORPORATE SEAL)

SUBSCRIBED AND SWORN TO THIS _____ DAY OF _____, 20____ BEFORE ME

Notary Public

My Commission Expires: _____

**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: _____

**Applicable to All DCAM Construction Projects
To Be Executed by GC/CMGC/All Subcontractors**

I, _____ authorized signatory for
Print Name

do hereby certify under penalties of perjury that Company shall comply with Federal Department of Homeland Security Requirements in hiring any and all "Employees" to be employed in the Project who are required to be listed in the certified payroll reports for the Project. Such compliance shall include, but not be limited to the faithful completion of the Federal Department of Homeland Security Form I-9 process by Company for each of its Employees. Company shall require each of its subcontractors to execute and provide to Company a Certificate of Compliance with Employment Eligibility Verification Requirements with the execution of each subcontract.

In addition, Company is aware that the certified payroll report form submitted by Company to DCAM contains a statement that the Form I-9 process was faithfully completed for each employee listed on that certified payroll report. Company thus acknowledges that it and all of its subcontractors will be required to certify that the Form I-9 process was faithfully completed for all Employees listed on each certified payroll report.

Project Title: _____

Signed under the pains and penalties of perjury the _____ day of _____ 20____

Name and Title: _____

Please print or type

**Request for Taxpayer
Identification Number and Certification**

2022-005
Completed form should be
given to the department or
the department you are
currently doing business with.

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.
Note: If the account is in more than one name, see the chart on page 2 for guidelines on whose number to enter.

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 <http://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
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor ²
4. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee ¹
b. So-called trust account that is not a legal or valid trust under state law	The actual owner ¹
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	
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: Title	Date:
--------------------------------------	--------------------------	-------

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

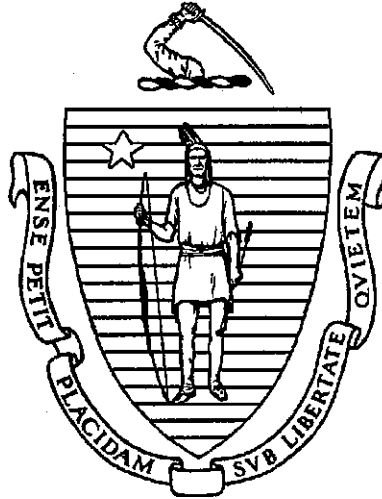
- Enter the name and title of a contact person who can answer questions about the information submitted on this EFT form.
- Enter the contact person's telephone number. Enter the contact person's e-mail address.

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

**2021-052 Inpatient Bathroom Renovations - Cain Bldg.
Taunton State Hospital
60 Hodges Avenue
Taunton, MA 02780**



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

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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, § 39O 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 periodic 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 &	\$1,000,000 each occurrence
Property Damage	\$2,000,000 general aggregate per project
Products & Completed Operations	\$1,000,000 annual aggregate
Personal & Advertising Injury	\$1,000,000 each occurrence
Medical Expenses	\$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 shall 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-name>PROJECT NO. <project-number>P. C. <Prime Contractor>**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-name>

PROJECT NO.

<project-number>

P. C. :

<Prime Contractor>

PCO NUMBER

PCO DATE

PCO DESC.

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	Hourly 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-name>

PROJECT NO.

<project-number>

P. C. :

<Prime Contractor>

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

<project-name>

PROJECT NO.

<project-number>

P. C. :

<Prime Contractor>

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

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.

0.00%

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

\$0.00

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		ITEM NUMBER	DESCRIPTION OF CHANGE ORDER	REASON FOR INCREASE	DATE OF Approval
CO NO.	Rev. qty RQ#	Extra work EWO#	Alter- ation ALT#	Time ext. TM#	co items	co subtotal	co total	Rev. qty RQ#	Extra work EWO#	Alter- ation ALT#	Time ext. TM#	Financed from contract	Funding Item		
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 _____
Firm Name Authorized Signature Date

III. DCAMM REVIEW (This Section To Be Completed By DCAMM-EM Team)

- (a) _____ Approved as Submitted (d) Operating Agency letter Attached _____
(b) _____ Unilaterally Approved as Adjusted (e) Resident Engineer letter Attached _____
Revised Price add / (deduct) _____
Revised Time Extension _____ Calendar Days (f) Lead Design firm letter Attached _____
(c) _____ Disapproved; Returned to PM by Contractor by _____

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 _____
☐ Project Manager ☐ Deputy Director ☐ Director ☐ Deputy Commissioner

Date _____

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

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

VENDOR CODE: VC xxxxxxxx

ADDRESS: STREET NAME, TOWN, STATE, ZIPCODE

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

	Previous Periods		Current Period		Total To-Date	
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 _____

MMARS FUNDING CODES (as required)

<u>PAYMENT NO.</u>	<u>CODE</u>	<u>UTILIZED</u>	<u>-5%</u>
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[illegible]

TOTALS:	\$	-	\$	-
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Vs. 8/20/2021

Duration: -31 Days

Current Invoice No: **XX Partial**

Description of work since last review

DESCRIPTION OF WORK	\$0.00

[illegible]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											
		8											
		9											
		10											
		11											
		12											
		13											
		14											
		15											
		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												
Sub- mitt 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

PAGE 1 OF 1
 RUN DATE: 8/20/2021

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
---	---------------

original: Operating Agency
Project Manager
Contracts Manager
Contractor (include original E1 cover letter)

ecc: Deputy Director
Project Engineer
Designer
Resident Engineer
Economist, OFA
Director of Finance, OFA
Bid Room Manager, OFA
Deputy Director, Certification

**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 VOB 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

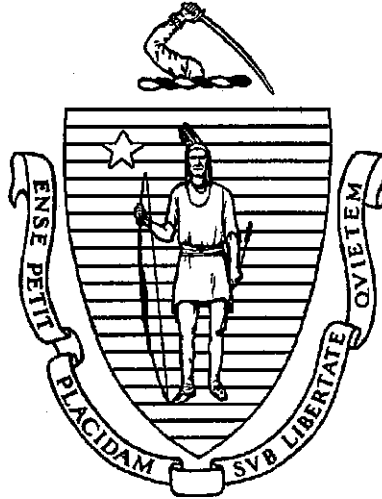
Email address

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 #2021-052
INPATIENT BATHROOM RENOVATIONS - CAIN BUILDING
TAUNTON STATE HOSPITAL
60 HODGES AVE.
TAUNTO, MA 02780**

**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

INPATIENT BATHROOM RENOVATIONS

AT

**TAUNTON STATE HOSPITAL, CAIN BUILDING
60 HODGES AVE
TAUNTON, MA 02780**

.....
PROJECT 2021-052
.....

**DEPARTMENT OF MENTAL HEALTH
OFFICE OF FACILITIES MANAGEMENT
HADLEY BUILDING - 167 LYMAN STREET
WESTBOROUGH, MA 01581**

PREPARED BY: KEVIN MCHUGH, P.E.

REVIEWED BY: MARIANA O'BRIEN, Ph.D.

DATE: MARCH 6, 2023

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INPATIENT BATHROOM RENOVATIONS AT THE TAUNTON STATE HOSPITAL, CAIN
BUILDING – TAUNTON, MASSACHUSETTS

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**INPATIENT BATHROOM RENOVATIONS AT THE TAUNTON STATE HOSPITAL, CAIN
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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. The Commonwealth of Massachusetts Department of Mental Health (DMH) facility located at the Taunton State Hospital, Caine Building, administers staff-secured treatment programs for patients with mental health issues.
- D. Due to the nature of the facility's operations and security concerns for the patients, 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 describes the upgrade work in inpatient bathrooms while the facility is occupied. The work shall be executed so as 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 assure safety and security of patients by the end of each 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 DEFINITIONS

- A. The following terms shall be applicable to these Specifications:
 - 1. **Designer's Project Manager:** Refers to Kevin McHugh, P.E., Coneco Engineers & Scientists, 4 First St. Bridgewater, MA 02324. (978) 656-8684 x210
 - 2. **DMH Project Engineer:** Refers to Mariana O'Brien, Ph.D., Massachusetts Department of Mental Health, Engineering and Facilities Management, 167 Lyman Street, Westborough, MA 01581. (857) 274-1048.

**INPATIENT BATHROOM RENOVATIONS AT THE TAUNTON STATE HOSPITAL, CAIN BUILDING
– TAUNTON, MASSACHUSETTS**

3. **DMH Site Director/COO:** Refers to James Gedra, Massachusetts Department of Mental Health, 60 Hodges Ave. Taunton, MA 02780. (508) 977-3110.
4. **DMH Director of Facilities:** Refers to Mark Anderson, Massachusetts Department of Mental Health, 60 Hodges Ave. Taunton, MA 02780. (508) 977-3028.
5. **Contractor:** Refers to the Contractor who has been awarded the overall contract for the work outlined by the Contract Documents.
6. **Subcontractor:** Refers to any contractor who is working under the direct supervision of the Contractor including but not limited to: steel erector, mason, electrician, carpenter, painter, and trucking/transport companies.
7. **Site:** Refers to Taunton State Hospital, Cain Building, located at 60 Hodges Ave, Taunton, MA 02780.

- B. The terms are provided to facilitate communication but do not supersede the legal definitions provided in the Contract.

1-03 WORK UNDER THIS CONTRACT

- A. The work described under this Contract is for the material and labor for the renovation of six (6) Shower Rooms; and conversion of two (2) Tub Rooms into MAAB compliant Shower Rooms and upgrade of their fan coil units at the Cain building in Taunton State Hospital, located at 60 Hodges Ave, Taunton, MA 02780.
- 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. Selective Demolition, as noted in drawings.
 5. Completing of improvements to the select restrooms as depicted on the Contract Drawings.
 6. New flooring and finishes.
 7. Miscellaneous patching and repair.
 8. Furnish and install all finish work as noted within the plans and specifications including but not limited to the following items: electrical, floor repair, doors, painting, ceilings, lighting, electrical/cabling, plumbing, all HVAC improvements as detailed in the plans and specifications, etc.

**INPATIENT BATHROOM RENOVATIONS AT THE TAUNTON STATE HOSPITAL, CAIN BUILDING
– TAUNTON, MASSACHUSETTS**

9. Repair, patch and/or replace any materials damaged by the demolition and installation of the new work.
- C. Contractor shall submit a list of preliminary Contract deliverables
 1. Schedule of Values, Construction Schedule, Schedule of submittals, 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.

1-04 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 so as 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 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.
- 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. Require personnel to use identification tags at all times.

**INPATIENT BATHROOM RENOVATIONS AT THE TAUNTON STATE HOSPITAL, CAIN BUILDING
– TAUNTON, MASSACHUSETTS**

- I. Visitor Identification: Provide identification tags for visitors on Project site, including Owner's Project Manager, Architect, Consultants, and Taunton State Hospital personnel. Require visitors to 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 Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.
- L. 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.

1-05 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. In order 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.

1-06 PERMITS, INSPECTION AND TESTING REQUIRED BY GOVERNING AUTHORITIES

- A. If the contract documents, laws, ordinances, rules, regulations or orders of

**INPATIENT BATHROOM RENOVATIONS AT THE TAUNTON STATE HOSPITAL, CAIN BUILDING
– TAUNTON, MASSACHUSETTS**

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.

1-07 TIME OF COMPLETION

- A. The Work shall start as stated in the Notice to Proceed and shall be completed within 120 consecutive calendar days.

1-08 THE CONTRACT 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 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.
- C. Dimensions: Verify dimensions indicated on drawings with field dimensions before fabrication or ordering of materials. Do not scale drawings. No extra charge or compensation will be allowed because of differences between actual dimensions and measurements indicated on the Drawings. Differences which may be found shall be submitted to the Architect for decision before proceeding with the work.
- D. Field Measurements for Fixed Equipment: Dimensions for fixed equipment to be supplied under this Contract or separate contracts shall be determined by field measurements taken jointly by the Contractor and the equipment supplier involved. A record of the field measurements shall be kept until time of substantial completion of the project, or until the equipment has been fully installed and accepted by the Owner, whichever is later. Responsibility for fixed equipment fabricated accurately to field measurements for proper fit and operation shall be that of the Contractor. Contractor shall pay all costs involved in correcting any misfitting fixed equipment as fabricated.

**INPATIENT BATHROOM RENOVATIONS AT THE TAUNTON STATE HOSPITAL, CAIN BUILDING
– TAUNTON, MASSACHUSETTS**

- E. 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.

1-09 CONTRACTOR QUALIFICATIONS

- A. The Contractor shall be a Division of Capital Asset Management and Maintenance (DCAMM) certified general contractor with a current certification.
- B. Within three business days from the bid opening, the apparent low bidder shall submit a certification in writing that it has successfully performed at least three recent (within last three years) projects of similar size, scope, and cost. The apparent low bidder shall submit the following information for each project:
 - 1. Project Description
 - 2. Project Value
 - 3. Date was conducted
 - 4. Reference with contact information for the Owner who was the recipient of the work.
- 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.

1-10 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.

1-11 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

**INPATIENT BATHROOM RENOVATIONS AT THE TAUNTON STATE HOSPITAL, CAIN BUILDING
– TAUNTON, MASSACHUSETTS**

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.

1-12 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 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 Engineer 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 Engineer. 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 to involve minimum disruption and inconvenience, and to be expedited 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 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.

1-13 REFERENCE STANDARDS

**INPATIENT BATHROOM RENOVATIONS AT THE TAUNTON STATE HOSPITAL, CAIN BUILDING
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- 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.

1-14 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. Coneco's Project Manager
 - 2. DMH Project Engineer
 - 2. DMH Site Director
 - 3. Contractor
 - 4. All Subcontractors
- C. The Contractor shall have a responsible representative at the pre-construction conference to be called by the DMH Project Engineer 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.

1-15 WORK BY DMH

- A. DMH will provide Site Access
- B. DMH will designate parking and staging areas.
- C. DMH will provide access to water, electrical, and sanitary facilities. Note that electrical service in the building is National Grid. If the Contractor requires additional power, the Contractor is responsible to provide the additional power under the base contract fee.

1-16 SUBCONTRACTORS

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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.

1-17 CUTTING, CORING, AND PATCHING, UNLESS OTHERWISE INDICATED

- A. The Contractor shall do all cutting, coring, fitting and patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by work of the Subcontractors as indicated in the Specifications.
- B. The Contractor shall not endanger any work by cutting, coring, excavating or otherwise altering the work and shall not cut or alter the work of any other Subcontractor except with the written consent of the DMH Project Manager.
- C. Submit a written request to the DMH Project Manager well in advance of executing any cutting or alteration which affects:
 - 1. Work of DMH or separate contractor.
 - 2. Structural value or integrity of any element of the Project.
 - 3. Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.
 - 4. Efficiency, operational life, maintenance, or safety of operational elements.
 - 5. Visual qualities of sight-exposed elements.
 - 6. Request shall include:
 - a. Identification of the Project.
 - b. Description of affected work.
 - c. The necessity for cutting, alteration, or excavation.
 - d. Effect on work of DMH or any separate contractor, or on structural or weatherproof integrity of Project.
 - e. Description of proposed work:
 - f. Alternatives to cutting and patching.
 - g. Cost proposal, when applicable.
 - h. Written permission of any separate contractor whose work will be affected.
 - 7. Should conditions of Work or the schedule indicate a change of products from original installation, Contractor shall submit request for substitution to the DMH Project Manager.
 - 8. Submit written notice to the DMH Project Manager designating date and time the work will be uncovered a minimum of three business days in advance.
- D. Performance:

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1. Execute cutting and patching by methods which will prevent damage to other work and will provide proper surfaces to receive installation of repairs.
 - a. In general, where mechanical cutting is required, cut work with sawing and grinding tools, not with hammering and chopping tools. Core drill openings through concrete work.
 - b. Prior to cutting and structural steel or concrete work, contact the DMH Project Manager in writing. Do not cut any structural steel and concrete work until approval has been granted by the DMH Project Manager.
2. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes.
3. Restore work which has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents.
4. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
5. Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.
6. Restore exposed finishes of patched areas; and, where necessary extend finish restoration onto retained work adjoining, in a manner which will eliminate evidence of patching.
 - a. Where patch occurs in a smooth painted surface, extend final paint coat over the entire unbroken surface containing the patch.
7. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
 - a. For continuous surfaces, refinish to nearest intersection.
 - b. For an assembly, refinish entire unit.

E. Existing Utilities Services:

1. Interruptions to critical existing utility services will not be allowed.
2. The Contractor shall locate and record on Drawings all existing utilities along the course of the work by such means as the DMH Project Manager may approve and shall preserve such marked locations until the work has progressed to the point where the encountered utility is fully exposed and protected as required. It shall be the Contractor's responsibility to notify the proper authorities and/or utility company before interfering therewith.
3. All exposed conduits, wires, and/or cables shall be provided with sufficient protection and support to prevent failure, fraying, or damage due to backfilling or other construction operations.
4. The Contractor shall not obstruct access to existing active utility system manholes and catch basins which continue to serve facilities other than the project construction site. The Contractor shall exercise measures as

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necessary to prevent the placement of impediments that limit continuous access by authorized utility company or DMH maintenance personnel and shall be required to reimburse the utility company or DMH for any expense incurred as a result of need to remove any such impediments to access.

1-18 SECURITY REQUIREMENTS

- A. The Contractor shall familiarize himself with DMH's security Requirements and shall abide by and conform with such established regulations at all times. 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. Proper identification must be worn at all times.

1-19 SAFETY REQUIREMENTS

- A. 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.
- B. Documentation records shall be initially complied 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.
- C. Building will be occupied during execution of work. 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.
- D. Provide fire extinguishers so that they shall be readily available at all times.
- E. All accident reports are to be transmitted to the DMH Project Manager within 24 hours of occurrences.
- F. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with his direct work.
- G. The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

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1. All employees on the Work and all other persons who may be affected thereby.
 2. All the work and all materials and equipment to be incorporated therein, whether in storage on or off site, under the care, custody or control of the subcontractors.
 3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.
 4. Contractor to provide full roof protection for his direct work.
- H. Provide screens, partitions or other approved barricades to effectively isolate building personnel and public from the work areas that are necessary during the demolition and reconstruction of the main entry and ancillary areas affected by the main entry upgrading during its time of closure. In addition, provide any and all necessary safety barriers within the surrounding area of the main entry due to the demolition and ongoing construction
- I. It shall be the obligation of the general contractor to maintain a free and clear passageway within the main lobby connected to the main entry under construction. Parts, tools, etc., shall be kept within the confines of the safety barricades of the construction area.
- J. The Contractor shall comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. He shall erect and maintain, as required by existing conditions and progress of the work, all reasonable safeguards and protection, including barricades, posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.
- K. The Contractor shall not load or permit any part of the work to be loaded so as to endanger its safety.
- L. In any emergency affecting the safety of persons or property, the Contractor shall act to prevent threatened damages, injury or loss.

1-20 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.

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3. Each Application shall include the following:
 - a. Updated Contractor's construction schedule showing current progress.
 - b. Updated Subcontractor list and contract values.
 - c. Certified payroll records.
 - d. Updated submittal log and schedule.
 - e. A Contractor's invoice showing the Contract number, and the remaining amount in the Contract.
 - 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.
 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

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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.

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- 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 Project Engineer's 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 Project Engineer's stamp and initials or signature indicating review and approval.
 - 5. After Project Engineer's 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

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- 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 inch, 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.

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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 CONICO'S ACTION

- A. General: Project Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Project Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect 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

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 excepted in the Contract Documents.

1-04 STAGING AND TEMPORARY LADDERS, RAMPS, RUNWAYS, ETC.

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.

1-07 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.

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- 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, 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.

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- 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 SITE SPECIFIC COVID-19 CONTRACTOR AND SUBCONTRACTOR REQUIREMENTS

- A. Site Specific Instructions:
 - 1. All contractors, subcontractors and vendors access will be limited to one entrance due to COVID-19, DMH shall choose the only one entrance to be used. DMH will confirm the entrance with the awarded contractor prior to project initiation.
 - 2. Face covering/mask must be worn at all time when outside the unit.
 - 3. Clients will be notified by the DMH to avoid the entrance being utilized during the construction period.
 - 4. Caution tape to be placed across the access in an X and a sign (Do Not Enter) as a reminder to clients not to enter the unit under work.
 - 5. Contractors must follow Covid-19 requirements laid out by the Covid-19 requirements (website links listed above).
 - 6. At the end of each working day the area of travel by the contractor, the work area and any object that the contractor came in contact with must be disinfected as per the Covid-19 requirements.
 - 7. Upon completion of the project the contractor is responsible for a complete clean up and disinfecting of the work areas.
 - 8. Disinfecting methods and products must be approved by DMH.

****** 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.
- E. Required Submittals, Product Data, Samples and Shop Drawings: Submit shop drawings, product data, initial selection samples, verification samples, calculations, coordination drawings, schedules, and all other submittals as specified in individual specification sections and complying with requirements in Section 013300 – Submittal Procedures.
 - 1. Provide submittals for cleaning and maintenance products to be used during construction and final cleaning.

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.
- B. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration and racking.

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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.

1-07 WARRANTIES

- A. Warranties Required: Refer to individual trade sections for specific product warranty requirements.
- B. Procurement: Where a warranty is required, do not purchase or subcontract for materials or work until it has been determined that parties required to countersign warranties are willing to do so.
- C. Warranty Forms: Submit written warranty to Owner through Architect for approval prior to execution. Furnish two copies of executed warranty to Owner for their records; furnish two additional conformed copies where required for maintenance manual.
- D. Work Covered: Contractor shall remove and replace other work of project which has been damaged as a result of failure of warranted work or equipment, or which must be removed and replaced to provide access to work under warranty. Unless otherwise specified, warranty shall cover full cost of replacement or repair, and shall not be pro-rated on basis of useful service life.
- E. Warranty Extensions: Work repaired or replaced under warranty shall be warranted until the original warranty expiration date or for ninety days whichever is later in time.
- F. Warranty Effective Starting Date: Guarantee period for all work, material and equipment shall begin on the date of substantial completion of the Project, not when subcontractor has completed their work nor when equipment is turned on. In addition to the one year guarantees for the entire work covered by these Contract Documents, refer to the various sections of the specifications for extended guarantee or maintenance requirements for various material and equipment.
- G. Warranties are Irrevocable: Warranties issued to the Owner are irrevocable.
 - 1. Non-Payment: If warrantor refuses to issue warranty, or attempts to revoke warranty due to lack of payment by any party other than the Owner, the Contractor shall resolve the payment conflict, and cause the warranty to be issued or reinstated.
 - 2. Incomplete or incorrect Installation: If warrantor refuses to issue warranty, or attempts to revoke warranty due to improper installation or other deficiency, the Contractor shall correct the deficiency and cause the warranty to be issued or reinstated.

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- H. Transferable Warranties: All warranties shall permit Owner to transfer or assign warranties to future owners or other assignors at no additional cost to the Owner for the full warranty period.

****** 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 Architect in its sole discretion, and neither the Architect nor the Owner shall have any liability to the Contractor arising out of such determination made by the Architect in good faith.

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- 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

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- 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, that 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.

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2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

1-08 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.

1-09 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.

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- 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.

1-10 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 024119
SELECTIVE DEMOLITION

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. It is not the intent herein to describe all the items and work required to be removed under this Section. The General Contractor shall assure himself that all of the work to be removed, not otherwise specified herein or described under other Sections, but shown on the Drawings, shall be removed under this Section at no additional cost to the Commonwealth.
- B. The General Contractor shall also examine other Sections of these Specifications and familiarize himself with their provisions regarding the removal of existing items and work. He shall understand that all items and work not specifically mentioned to be removed by the requirements of other Sections of these Specifications shall be removed as part of the work under this Section.
- C. The scope of work consists of material and services to be furnished under this Section, and without limiting the generality thereof, includes labor, equipment and services required for the removal of existing work, special protection and all work incidental thereto as specified herein and as shown on the Drawings.

1-03 RELATED WORK SPECIFIED ELSEWHERE

- A. The following work is not included in this Section and is to be performed under the designated Sections:
 - 1. Movable items and items of User Agency's equipment in the areas of the existing building affected by the work under this Contract will be removed by the User Agency.
 - 3. The patching and repair of ceilings, floors, coves, and walls caused by work performed under this Section is included under Sections of these Specifications describing similar construction. The General Contractor shall do his utmost to keep such necessary patching and repairing to a minimum.

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1-04 PERMITS AND CODES

- A. Work specified herein shall conform to the Drawings and Specifications and shall comply with all rules, regulations, laws and ordinances of the Commonwealth of Massachusetts.
- B. The General Contractor shall procure and pay for all permits and licenses required for the complete work specified or inferred under this Section.

1-05 SCHEDULING

- A. Before beginning the removal of work and demolition, the General Contractor shall consult jointly with the Facility and Project Engineer to determine the schedule of work, exact places, times and days during which the removal and demolition work may, or may not be carried on, and to determine further reasonable requirements, particularly in regards to noise prevention, dust prevention, weather protection, and safety precautions.
- B. No work shall be started in existing building without prior approval of the Facility. The General Contractor shall give the Facility adequate advance notice of his readiness to start such work in order that they may properly rearrange activities or evacuate the spaces to be affected.

1-06 EXAMINATION OF PREMISES

The Contractor will be held to have examined the premises before submitting proposals for the work and to have satisfied himself as to the existing conditions under which he will be obliged to operate or that will in any way affect the work under this Contract, also the character and amount of materials and debris to be removed. No allowances will be made in this connection for error or negligence of the Demolition Contractor.

1-07 USE OF PREMISES

- A. 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 Facility.
- B. All parking regulations shall be observed.
- C. All trucks carrying loose, dry material such as debris, broken concrete block, plaster, 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.

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1-08 PROTECTION

- A. The removal of all portions of the structure to be removed shall be done with utmost care, using tools and methods that will not transfer any heavy shocks to the remaining portions of the existing building. All possible care shall be taken to avoid vibration and other disturbances.
- B. All existing items directed by the Project Engineer to be retained as the User Agency's property or relocated as shown on the drawings or noted herein, shall be handled and removed with full consideration for their preservation. It is the full responsibility of the General Contractor to replace, without additional charge to the Commonwealth, all such items which are lost or damaged due to the removal operations or handling.
- C. When removing materials and making openings in walls, floors, etc., the General Contractor shall take all precautions and use whatever protective devices, shoring, guardrails, and the like as may be required to assure that the remaining and adjacent portions of the existing work which is to remain is substantially supported and/or not loaded beyond safe limits.
- D. Consult with the Facility Manager regarding the electrical/mechanical equipment.

PART 2 – MATERIALS

2-02 DISPOSAL OF WORK REMOVED

- A. All non-salvageable refuse and debris which accumulate as a result of work under this Section shall be removed. No refuse or debris of any nature shall be allowed to accumulate to the detriment of the work.
- B. All existing items removed under this Section shall become the responsibility of the Demolition Contractor, and legally be disposed of off-site at his expense, unless such existing items to be removed are specifically noted on the drawings to be relocated or unless otherwise directed by the Project Engineer to be rendered to and become the property of the Commonwealth.
- C. Remove debris in covered containers on a route designated by the Facility.

PART 3 – EXECUTION

3-01 PREPARATION

Before starting the removal of work, the Contractor shall arrange for the disconnection of active utility services in the areas to be worked in. All work on existing utilities shall be accomplished by the respective sub trades or utility companies having jurisdiction.

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3-02 REMOVAL OF EXISTING WORK

- A. Remove existing door, frames, and hardware as indicated in the Drawings and Schedules.
 - 1. Store existing equipment and appliances for reinstallation only as noted.
- B. Remove dry walls and other miscellaneous materials as noted on drawings.
- D. Provide dust protection to contain dust and debris to the work area.
- E. Disconnect utilities as required.

3-04 CLEAN-UP

At the completion of work, all rubbish, debris, waste, materials, and salvaged materials shall be removed from the site. All tools, scaffolds, apparatus and appliances used in connection with work under this Section shall be removed by the Contractor, and the premises shall be left in clean condition, ready for the alteration work as described under other Sections of these Specifications.

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

SECTION 078440
FIRE-RESISTIVE JOINT SYSTEMS

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 OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the Work of this Section, including but not limited to fire-resistive joint systems for the following:
 - 1. Floor-to-wall joints.
 - 2. Head-of-wall joints.
 - 3. Wall-to-wall joints.
 - 4. Perimeter fire-resistive joint systems consisting of floor-to-wall joints between perimeter edge of fire-resistance-rated door assemblies

1-03 PERFORMANCE REQUIREMENTS

- A. General: Provide fire-resistive joint systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of assembly in which fire-resistive joint systems are installed.
- B. For fire-resistive systems exposed to view, provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

1-04 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Product Certificates: For each type of fire-resistive joint system, signed by product manufacturer.
- C. Fire-Test-Response Characteristics: Provide fire-resistive joint systems that comply with the following requirements and those specified in Part 1 "Performance Requirements" Article:
 - 1. Fire-resistance tests are performed by a qualified testing and inspecting agency. A qualified testing and inspecting agency is UL or another agency

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- performing testing and follow-up inspection services for fire-resistive joint systems acceptable to authorities having jurisdiction.
2. Fire-resistive joint systems are identical to those tested per methods indicated in Part 1 "Performance Requirements" Article and comply with the following:
 - a. Fire-resistive joint system products bear classification marking of qualified testing and inspecting agency.
 - b. Fire-resistive joint systems correspond to those indicated by referencing system designations of the qualified testing and inspecting agency.

1-05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver fire-resistive joint system products to Project site in original, unopened containers or packages with qualified testing and inspecting agency's classification marking applicable to Project and with intact and legible manufacturers' labels identifying product and manufacturer, date of manufacture, lot number, shelf life, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials for fire-resistive joint systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

1-06 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install fire-resistive joint systems when ambient or substrate temperatures are outside limits permitted by fire-resistive joint system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Ventilate fire-resistive joint systems per manufacturer's written instructions by natural means or, if this is inadequate, forced-air circulation.

1-06 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install fire-resistive joint systems when ambient or substrate temperatures are outside limits permitted by fire-resistive joint system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Ventilate fire-resistive joint systems per manufacturer's written instructions by natural means or, if this is inadequate, forced-air circulation.

1-07 COORDINATION

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- A. Coordinate construction of joints to ensure that fire-resistive joint systems are installed
- B. according to specified requirements.
- C. Coordinate sizing of joints to accommodate fire-resistive joint systems.
- D. Do not cover up through-penetration firestop system installations that will become concealed behind other construction until each installation has been examined building inspector, if required by authorities having jurisdiction.

PART 2 – PRODUCTS

2-01 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, fire-resistive joint systems that may be incorporated into the Work include, but are not limited to the following:
 - 1. Hilti, Inc.
 - 2. BioFireshield; RectorSeal Corporation.
 - 3. Specified Technologies, Inc. (STI).
 - 4. 3M; Fire Protection Products Division.

2-02 FIRE-RESISTIVE JOINT SYSTEMS

- A. Low-Emitting Materials: Fire-resistive joint system sealants 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."
- B. VOC Content: Provide fire-resistive joint system sealants that comply with the following limits for VOC content:
 - 1. Architectural Sealants: 250 g/L.
 - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 - 3. Sealant Primers for Porous Substrates: 775 g/L.
 - 4. Methylene chloride and perchloroethylene may not be intentionally added to sealants.
- C. General: Where required, provide fire-resistive joint systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of assemblies in or between which fire-resistive joint systems are installed. Fire-resistive joint systems shall accommodate building movements without impairing their ability to resist the passage of fire and hot gases.

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- D. Joints in or between Fire-Resistance-Rated Construction: Provide fire-resistive joint systems with ratings determined per ASTM E 1966 or UL 2079.
- E. Joints in Smoke Barriers: Provide fire-resistive joint systems with ratings determined per UL 2079.
 - 1. L-Rating: Not exceeding 5.0 cfm/ft (0.00775 cu. m/s x m) of joint at 0.30 inch wg (74.7 Pa) at both ambient and elevated temperatures.
- F. Compatibility: Provide fire-resistive joint systems that are compatible with joint substrates, under conditions of service and application, as demonstrated by fire-resistive joint system manufacturer based on testing and field experience.
- G. Accessories: Provide components of fire-resistive joint systems, including primers and forming materials, that are needed to install fill materials and to comply with Part 1 "Performance Requirements" Article. Use only components specified by fire-resistive joint system manufacturer and approved by the qualified testing and inspecting agency for systems indicated.

PART 3 – EXECUTION

3-01 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for joint configurations, substrates, and other conditions affecting performance of work.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

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3-02 PREPARATION

- A. Surface Cleaning: Clean joints immediately before installing fire-resistive joint systems to comply with fire-resistive joint system manufacturer's written instructions and the following requirements:
 - 1. Remove from surfaces of joint substrates foreign materials that could interfere with adhesion of fill materials.
 - 2. Clean joint substrates to produce clean, sound surfaces capable of developing optimum bond with fill materials. Remove loose particles remaining from cleaning operation.
 - 3. Remove laitance and form-release agents from concrete.
- B. Priming: Prime substrates where recommended in writing by fire-resistive joint system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.
- C. Masking Tape: Use masking tape to prevent fill materials of fire-resistive joint system from contacting adjoining surfaces that will remain exposed on completion of Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from fire-resistive joint system materials. Remove tape as soon as possible without disturbing fire-resistive joint system's seal with substrates or damaging adjoining surfaces.

3-03 INSTALLATION

- A. General: Install fire-resistive joint systems to comply with Part 1 "Performance Requirements" Article and fire-resistive joint system manufacturer's written installation instructions for products and applications indicated.
- B. Install forming/packing/backing materials and other accessories of types required to support fill materials during their application and in position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
- C. Install fill materials for fire-resistive joint systems by proven techniques to produce the following results:
 - 1. Fill voids and cavities formed by openings and forming/packing/backing materials as required to achieve fire-resistance ratings indicated.
 - 2. Apply fill materials so they contact and adhere to substrates formed by joints.
 - 3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3-04 CLEANING AND PROTECTING

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- A. Clean off excess fill materials adjacent to joints as Work progresses by methods and with cleaning materials that are approved in writing by fire-resistive joint system manufacturers and that do not damage materials in which openings occur.
- B. Provide final protection and maintain conditions during and after installation that ensure fire-resistive joint systems are without damage or deterioration at time of Substantial Completion. If damage or deterioration occurs despite such protection, cut out and remove damaged or deteriorated fire-resistive joint systems immediately and install new materials to produce fire-resistive joint systems complying with specified requirements.

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

SECTION 081113
HOLLOW METAL DOORS AND FRAMES

PART 1 – GENERAL

1-01 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1-02 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Standard hollow-metal steel doors.
 - 2. Standard hollow-metal steel frames.
 - 3. Transoms matching doors.
 - 4. Shop-installed glass and glazing for the work of this Section.
- B. Alternates: Not Applicable.
- C. Items To Be Installed Only: Not Applicable.

1-03 SUBMITTALS

- D. Product Data: Include construction details, material descriptions, core descriptions, label compliance, fire-resistance rating, temperature-rise ratings, and finishes for each type of steel door and frame specified.
- E. Shop Drawings:
 - 1. Elevations of each door design, including transoms.
 - 2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
 - 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 - 4. Locations of reinforcement and preparations for hardware.
 - 5. Details of each different wall opening condition.
 - 6. Details of anchorages, joints, field splices, and connections.
 - 7. Details of accessories.
 - 8. Details of moldings, removable stops, and glazing.
 - 9. Details of conduit and preparations for power, signal, and control systems.
- F. Schedule: Provide a schedule of hollow metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with door hardware schedule.
- G. Qualification Data: For Installer.

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- H. Product Test Reports: Based on evaluation of comprehensive fire tests performed by a qualified testing agency, for each type of standard steel door and frame.

1-04 QUALITY ASSURANCE

- I. Installer Qualifications: An employer of workers trained and approved by manufacturer.
- J. Source Limitations: Obtain standard steel doors and frames through one source from a single manufacturer.
- K. Fire-Rated Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings and temperature-rise limits indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.
 - 1. Smoke- and Draft-Control Assemblies: Provide an assembly with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.
- L. Fire-Rated, Borrowed-Light Assemblies (Including Sidelights and Transoms): Complying with NFPA 80 and listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9.
- M. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01.

1-05 DELIVERY, STORAGE, AND HANDLING

- N. Deliver doors and frames palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
- O. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- P. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch-high wood blocking. Do not store in a manner that traps excess humidity.
 - 1. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

1-06 PROJECT CONDITIONS

- Q. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

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1-07 COORDINATION

- R. Coordinate installation of anchorages for hollow 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.

PART 2 - PRODUCTS

2-01 MANUFACTURERS

- S. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Amweld International.
 2. Ceco Door Products; an ASSA ABLOY Group Company.
 3. CURRIES Company; an ASSA ABLOY Group Company.
 4. Mesker Door Inc.
 5. Pioneer Industries, Inc.
 6. Republic Builders Products Company.
 7. Steelcraft, an Ingersoll Rand Company.

2-02 MATERIALS

- T. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- U. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- V. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum **G60** metallic coating.
- W. Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), **40Z** coating designation; mill phosphatized.
1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- X. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
- Y. Powder-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow metal frames of type indicated.
- Z. Grout: ASTM C 476, except with a maximum slump of **4 inches**, as measured according to ASTM C 143/C 143M.
- AA. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool with **6- to 12-lb/cu. ft.** density; with maximum flame-spread and smoke-development indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.

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- BB. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for **15-mil** dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2-03 STANDARD STEEL DOORS

- CC. General: Provide doors and transoms of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces, unless otherwise indicated. Comply with ANSI A250.8.
1. Design: Flush panel.
 2. Core Construction: Manufacturer's standard kraft-paper honeycomb, polystyrene, polyurethane, mineral-board, or vertical steel-stiffener core that produces doors complying with ANSI A250.8.
 - a. Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.
 - b. Thermal-Rated (Insulated) Exterior Doors: Where indicated, provide doors fabricated with thermal-resistance value (R-value) of not less than **4.0 deg F x h x sq. ft./Btu** when tested according to ASTM C 1363.
 3. Top and Bottom Edges: Closed with flush or inverted **0.042-inch**-thick end closures or channels of same material as face sheets.
 4. Tolerances: Comply with SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."
- DD. Exterior Doors: Face sheets fabricated from metallic-coated steel sheet. Provide doors complying with requirements indicated below by referencing ANSI A250.8 for level and model and ANSI A250.4 for physical-endurance level:
1. Level 3 and Physical Performance Level A (Extra Heavy Duty), Model 2 (Seamless), 1-3/4 inches thick.
- EE. Interior Doors: Face sheets fabricated from cold-rolled steel sheet, unless otherwise indicated to comply with exterior door requirements. Provide doors complying with requirements indicated below by referencing ANSI A250.8 for level and model and ANSI A250.4 for physical-endurance level:
1. Level 2 and Physical Performance Level B (Heavy Duty), Model 2 (Seamless), 1-3/4 inches thick.
- FF. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.
- GG. Fabricate concealed stiffeners and hardware reinforcement from either cold- or hot-rolled steel sheet.

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2-04 STANDARD STEEL FRAMES

- HH. General: Comply with ANSI A250.8 and with details indicated for type and profile.
- II. Exterior Frames: Fabricated from metallic-coated steel sheet.
1. Fabricate frames with mitered or coped and welded face corners and seamless face joints.
 2. Frames for Level 3 Steel Doors: 0.067-inch-thick steel sheet.
- JJ. Interior Frames: Fabricated from cold-rolled steel sheet, unless otherwise indicated to comply with exterior frame requirements.
1. Fabricate frames with mitered or coped and welded face corners and seamless face joints.
 2. Frames for Level 2 Steel Doors: 0.053-inch-thick steel sheet.
- KK. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.

2-05 FRAME ANCHORS

- LL. Jamb Anchors:
1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
 2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.
 3. Compression Type for Drywall Slip-on Frames: Adjustable compression anchors.
 4. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch-diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.
- MM. Floor Anchors: Formed from same material as frames, not less than 0.042 inch (1.0 mm) thick, and as follows:
1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.
 2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch height adjustment. Terminate bottom of frames at finish floor surface.

2-06 HOLLOW METAL PANELS

- A. Provide hollow metal panels of same materials, construction, and finish as specified for adjoining hollow metal work.

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2-07 STOPS AND MOLDINGS

- A. Moldings for Glazed Lites in Doors: Minimum **0.032 inch** thick, fabricated from same material as door face sheet in which they are installed.
- B. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of **5/8 inch** high unless otherwise indicated.
- C. Loose Stops for Glazed Lites in Frames: Minimum **0.032 inch** thick, fabricated from same material as frames in which they are installed.

2-08 LOUVERS

- A. Provide louvers for interior doors, where indicated, that comply with SDI 111C, with blades or baffles formed of **0.020-inch-thick**, cold-rolled steel sheet set into **0.032-inch-thick** steel frame.
 - 1. Sightproof Louver: Stationary louvers constructed with inverted V-shaped or Y-shaped blades.
 - 2. Fire-Rated Automatic Louvers: Louvers constructed with movable blades closed by actuating fusible link, and listed and labeled for use in fire-rated door assemblies of type and fire-resistance rating indicated by same testing and inspecting agency that established fire-resistance rating of door assembly.

2-09 GLASS

- A. Heat-Treated Float Glass for Non-Rated Doors: ASTM C 1048; Type I; Quality-Q3; Class I (clear) unless otherwise indicated; of kind and condition indicated.
- B. Fire-Protection-Rated Tempered Glass for Rated Doors: **1/4-inch-thick**, fire-protection-rated tempered glass, complying with testing requirements in 16 CFR 1201 for Category II materials.
 - 1. Fire-Protection-Rated Glazing: Listed and labeled by a testing agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 252 for door assemblies.
 - 2. Fire-Protection-Rated Glazing Labeling: Permanently mark fire-protection-rated glazing with certification label of a testing agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, test standard, whether glazing is for use in fire doors or other openings, whether or not glazing passes hose-stream test, whether or not glazing has a temperature rise rating of **450 deg F**, and the fire-resistance rating in minutes.

2-10 ACCESSORIES

- A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.
- B. Ceiling Struts: Minimum **1/4-inch-thick by 1-inch-wide** steel.
- C. Grout Guards: Formed from same material as frames, not less than **0.016 inch** thick.

2-11 FABRICATION

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- A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- B. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117.
- C. Hollow Metal Doors:
 - 1. Exterior Doors: Provide weep-hole openings in bottom of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
 - 2. Glazed Lites: Factory cut openings in doors.
 - 3. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum **3/4 inch** beyond edge of door on which astragal is mounted.
- D. Hollow Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
 - 1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and not visible.
 - 2. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as doorframe. Fasten members at crossings and to jambs by butt welding.
 - 3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 - 4. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
 - 5. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
 - 6. Jamb Anchors: Provide number and spacing of anchors as follows:
 - a. Masonry Type: Locate anchors not more than **18 inches** from top and bottom of frame. Space anchors not more than **32 inches** o.c. and as follows:
 - 1) Two anchors per jamb up to **60 inches** high.
 - 2) Three anchors per jamb from **60 to 90 inches** high.
 - 3) Four anchors per jamb from **90 to 120 inches** high.
 - 4) Four anchors per jamb plus 1 additional anchor per jamb for each **24 inches** or fraction thereof above **120 inches** high.
 - b. Stud-Wall Type: Locate anchors not more than **18 inches** from top and bottom of frame. Space anchors not more than **32 inches** o.c. and as follows:
 - 1) Three anchors per jamb up to **60 inches** high.
 - 2) Four anchors per jamb from **60 to 90 inches** high.
 - 3) Five anchors per jamb from **90 to 96 inches** high.
 - 4) Five anchors per jamb plus 1 additional anchor per jamb for each **24 inches** or fraction thereof above **96 inches** high.
 - 5) Two anchors per head for frames above **42 inches** wide and mounted in metal-stud partitions.

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- c. Compression Type: Not less than two anchors in each jamb.
 - d. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.
- 7. Door Silencers: Except on weather-stripped doors, 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.
- E. Fabricate concealed stiffeners, edge channels, and hardware reinforcement from either cold- or hot-rolled steel sheet.
- F. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Section 087100 - DOOR HARDWARE.
 - 1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
 - 2. Reinforce doors and frames to receive nontemplated, mortised and surface-mounted door hardware.
 - 3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
 - 4. Coordinate locations of conduit and wiring boxes for electrical connections with Section 260001 - ELECTRICAL WORK.
- G. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.
 - 1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow metal work.
 - 2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
 - 3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
 - 4. Provide loose stops and moldings on inside of hollow metal work.
 - 5. Coordinate rabbet width between fixed and removable stops with type of glazing and type of installation indicated.

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2-12 STEEL FINISHES

- A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.
 - 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3-01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3-02 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.
- B. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness to the following tolerances:
 - 1. Squareness: Plus or minus **1/16 inch**, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - 2. Alignment: Plus or minus **1/16 inch**, measured at jambs on a horizontal line parallel to plane of wall.
 - 3. Twist: Plus or minus **1/16 inch**, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - 4. Plumbness: Plus or minus **1/16 inch**, measured at jambs on a perpendicular line from head to floor.
- C. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3-03 INSTALLATION

- A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
- B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11.

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1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - a. At fire-protection-rated openings, install frames according to NFPA 80.
 - b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
 - c. Install frames with removable glazing stops located on secure side of opening.
 - d. Install door silencers in frames before grouting.
 - e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
 - f. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
 - g. Field apply bituminous coating to backs of frames that are filled with grout.
2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
 - a. Floor anchors may be set with powder-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation behind frames.
4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
5. Concrete Walls: Solidly fill space between frames and concrete with grout. Take precautions, including bracing frames, to ensure that frames are not deformed or damaged by grout forces.
6. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
7. In-Place Gypsum Board Partitions: Secure frames in place with postinstalled expansion anchors through floor anchors at each jamb. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
8. Ceiling Struts: Extend struts vertically from top of frame at each jamb to overhead structural supports or substrates above frame unless frame is anchored to masonry or to other structural support at each jamb. Bend top of struts to provide flush contact for securing to supporting construction. Provide adjustable wedged or bolted anchorage to frame jamb members.
9. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb 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.

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- C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.
 - 1. Non-Fire-Rated Standard Steel Doors:
 - a. Jamb and Head: **1/8 inch** plus or minus **1/16 inch**.
 - b. Between Edges of Pairs of Doors: **1/8 inch** plus or minus **1/16 inch**.
 - c. Between Bottom of Door and Top of Threshold: Maximum **3/8 inch**.
 - d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum **3/4 inch**.
 - 2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
 - 3. Smoke-Control Doors: Install doors according to NFPA 105.
- D. Glazing Stops: Comply with hollow metal manufacturer's written instructions.
 - 1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than **9 inches** o.c. and not more than **2 inches** o.c. from each corner.

3-04 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove grout and other bonding material from hollow metal work immediately after installation.
- C. 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.
- D. Metallic-Coated Surfaces: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

**** END OF SECTION ****

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SECTION 092116

GYPSUM BOARD ASSEMBLIES

PART 2 - GENERAL

2.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

2.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Interior gypsum wallboard.
 2. Exterior gypsum board panels for ceilings and soffits.
 3. Tile backing panels.
 4. Acoustic insulation in gypsum wallboard assemblies.
 5. Non-load-bearing steel framing.
 6. Marking and identification for fire- and smoke-partitions.
- B. Alternates: Not Applicable.
- C. Items To Be Installed Only: Install the following items as furnished by the designated Sections:
1. Section 210001 - FIRE PROTECTION:
 - a. Access doors in gypsum board assemblies.
 2. Section 220001 - PLUMBING:
 - a. Access doors in gypsum board assemblies.
 3. Section 230001 - HEATING, VENTILATING, AND AIR CONDITIONING:
 - a. Access doors in gypsum board assemblies.
 - b. Pipe and duct sleeves for placement into gypsum board openings.
 4. Section 260001 - ELECTRICAL WORK:
 - a. Access doors in gypsum board assemblies.
- D. Items To Be Furnished Only: Not Applicable.
- E. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 054000 - COLD-FORMED METAL FRAMING or load-bearing steel framing.
 2. Section 061600 - SHEATHING for gypsum sheathing at exterior assemblies.

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3. Section 092117 - GYPSUM BOARD SHAFT WALL ASSEMBLIES for framing, gypsum panels, other components of shaft wall assemblies, and finishing gypsum board shaft wall assemblies.
4. Section 092600 - GYPSUM VENEER PLASTERING for gypsum base at veneer plaster and veneer plaster finish.

2.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide fire stop tracks capable of withstanding deflection within limits and under conditions indicated.
 1. Design framing system to maintain clearances at openings, to allow for construction tolerances, and to accommodate live load deflection of primary building structure.

2.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. LEED Submittals:
 1. Product Data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
 2. Product Certificates for Credit MR 5: For products and materials required to comply with requirements for regional materials, certificates indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating distance to Project, cost for each regional material, and fraction by weight that is considered regional.
 3. Product Data for Credit IEQ 4.1: For adhesives used to laminate gypsum board panels to substrates, documentation including printed statement of VOC content.
- C. Samples: Full-size Sample in 12-inch-long length for each trim accessory indicated.
- D. Shop Drawings: If materials and systems other than those specified and those indicated on the Drawings are proposed for use, submit shop drawings signed and sealed by a structural engineer licensed in the Commonwealth of Massachusetts certifying proposed systems meet code requirements, project requirements and the following deflection criteria:
 1. For gypsum board assemblies without applied rigid finishes L/240; for gypsum board assemblies with applied rigid finishes such as tile, stone, wood paneling L/360. Lateral load 5 ps.f. except greater at shafts. Lateral load at shafts shall be required based on analysis of equipment and systems using shaft.

2.5 QUALITY ASSURANCE

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

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- B. Marking and Identification for Fire- and Smoke-Partitions: Fire walls, fire barriers, fire partitions, smoke barriers, smoke partitions and other walls required to have protected openings or penetrations shall be effectively and permanently identified with signs or stenciling. Such identification shall:
 - 1. Be located in accessible concealed floor, floor-ceiling or attic spaces; and
 - 2. Be repeated at intervals not exceeding 30 feet measured horizontally along the wall or partition; and
 - 3. Include lettering not less than 0.5 inch in height, incorporating the suggested wording: "FIRE AND/OR SMOKE BARRIER – PROTECT ALL OPENINGS," or other wording.
- C. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.
- D. Mockups: Before beginning gypsum board installation, install mockups of at least 100 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Install mockups for the following:
 - a. Each level of gypsum board finish indicated for use in exposed locations.
 - b. Each texture finish indicated.
 - 2. Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups.
 - 3. Simulate finished lighting conditions for review of mockups.
 - 4. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

2.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in original packages, containers, and bundles bearing brand name and identification of manufacturer or supplier.
 - 1. Deliver and store materials in accordance with Gypsum Association Publications GA-216, GA-238 and GA-801.
- B. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging.

2.7 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Do not install interior products until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.

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1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 3 - PRODUCTS

3.1 NON-LOAD-BEARING STEEL FRAMING, GENERAL

- A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.
1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal, unless otherwise indicated.
 2. Protective Coating: manufacturer's standard corrosion-resistant zinc coating, unless otherwise indicated.

3.2 SUSPENSION SYSTEM COMPONENTS

- A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625-inch-diameter wire, or double strand of 0.0475-inch-diameter wire.
- B. Hanger Attachments to Concrete:
1. Anchors: Fabricated from corrosion-resistant materials with holes or loops for attaching wire hangers and capable of sustaining, without failure, a load equal to 5 times that imposed by construction as determined by testing according to ASTM E 488 by an independent testing agency.
 - a. Type: Postinstalled, expansion anchor.
- C. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.162-inch diameter.
- D. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.0538 inch and minimum 1/2-inch- wide flanges with depth as required for span and loading and indicated on Drawings.
- E. Furring Channels (Furring Members): 0.0538-inch bare-steel thickness, with minimum 1/2-inch-wide flanges, 3/4 inch deep.
- F. Grid Suspension System for Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Armstrong World Industries, Inc.; Drywall Grid Systems.
 - b. Chicago Metallic Corporation; Drywall Furring System.
 - c. USG Corporation; Drywall Suspension System.

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3.3 STEEL FRAMING FOR FRAMED ASSEMBLIES

- A. Steel Studs and Runners: ASTM C 645.
 - 1. Minimum Base-Metal Thickness: **0.0312 inch**.
- B. Slip-Type Head Joints: Where indicated, provide one of the following:
 - 1. Single Long-Leg Runner System: ASTM C 645 top runner with **2-inch**- deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top runner and with continuous bridging located within **12 inches** of the top of studs to provide lateral bracing.
 - 2. Double-Runner System: ASTM C 645 top runners, inside runner with **2-inch**-deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.
 - 3. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 - a. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) Dietrich Metal Framing; SLP-TRK Slotted Deflection Track.
 - 2) Steel Network Inc. (The); VertiClip Series.
 - 3) Superior Metal Trim; Superior Flex Track System (SFT).
- C. Fire stop Tracks: Top runner manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness compatible with studs and in width to accommodate depth of studs.
 - 1. Grace Construction Products; FlameSafe FlowTrak System.
 - 2. Fire Trak Corp.; Fire Trak attached to studs with Fire Trak Slip Clip.
 - 3. Metal-Lite, Inc.; The System.
- D. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
 - 1. Minimum Base-Metal Thickness: **0.0312 inch**.
- E. Cold-Rolled Channel Bridging: **0.0538-inch** bare-steel thickness, with minimum **1/2-inch**- wide flanges.
 - 1. Depth: **1-1/2 inches**.
 - 2. Clip Angle: Not less than **1-1/2 by 1-1/2 inches**, **0.068-inch**-thick, galvanized steel.
- F. Hat-Shaped, Rigid Furring Channels: ASTM C 645.
 - 1. Minimum Base Metal Thickness: **0.0312 inch**.
 - 2. Depth: **1-1/2 inches**.
- G. Resilient Furring Channels: **1/2-inch**-deep, steel sheet members designed to reduce sound transmission.

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1. Configuration: Asymmetrical or hat shaped.
- H. Z-Shaped Furring: With slotted or nonslotted web, face flange of **1-1/4 inches** wall attachment flange of **7/8 inch**, minimum bare-metal thickness of **0.0179 inch**, and depth required to fit insulation thickness indicated.
- I. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- J. Isolation Strip at Exterior Walls: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, **1/8 inch** thick, in width to suit steel stud size.

3.4 INTERIOR GYPSUM BOARD

- A. General: Complying with ASTM C 1396/C 1396M, as applicable to type of gypsum board indicated and whichever is more stringent.
 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. USG Corporation.
 - b. Georgia Pacific Gypsum.
 - c. Lafarge North America.
 - d. National Gypsum Company.
- B. Fire-Resistant Type X:
 1. Thickness: **5/8 inch**.
 2. Long Edges: Tapered.
- C. Ceiling Type: Manufactured to have more sag resistance than regular-type gypsum board.
 1. Thickness: **5/8 inch**.
 2. Long Edges: Tapered.
- D. Abuse-Resistant Type: Manufactured to produce greater resistance to surface indentation and through-penetration (impact resistance) than standard, regular-type and Type X gypsum board.
 1. Core: **5/8 inch**, Type X.
 2. Long Edges: Tapered.
- E. Impact-Resistant Type: Manufactured to produce greater resistance to through-penetration than typical abuse-resistant gypsum wallboard through the use of fiberglass mesh embedded into the core. Must provide Level 2 or Level 3 resistance to soft and hard body impacts per ASTM C1629..
 1. Core: **5/8 inch**, Type X.
 2. Long Edges: Tapered.
- F. Flexible Type: Manufactured to bend to fit radii and to be more flexible than standard regular-type gypsum board of same thickness.

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1. Thickness: **1/4 inch**.
2. Long Edges: Tapered.

3.5 EXTERIOR GYPSUM BOARD FOR CEILINGS AND SOFFITS

- A. Exterior Gypsum Soffit Board: ASTM C 1396/C 1396M, Section 8, with manufacturer's standard edges.
 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. USG Corporation.
 - b. Georgia Pacific Gypsum.
 - c. Lafarge North America.
 - d. National Gypsum Company.
 2. Core: **5/8 inch**, Type X.
- B. Glass-Mat Gypsum Sheathing Board: ASTM C 1177/C 1177M, with fiberglass mat laminated to both sides and with manufacturer's standard edges.
 1. Available Products: Subject to compliance with requirements, provide one of the following:
 - a. CertainTeed Corporation; GlasRoc Sheathing.
 - b. Georgia-Pacific Gypsum LLC; DensGlass Sheathing.
 - c. Lafarge North America; Weather Defense Platinum.
 - d. National Gypsum; Gold Bond e²XP Extended Exposure Sheathing.
 - e. USG Corporation; Securock Sheathing.
 2. Core: **5/8 inch**, Type X.

3.6 TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A108.1.
 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Custom Building Products; Wonderboard.
 - b. FinPan, Inc.; Util-A-Crete Concrete Backer Board.
 - c. National Gypsum; PermaBase Cement Board.
 - d. USG Corporation; DUROCK Cement Board.
 2. Thickness: **1/2 inch**.

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3.7 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc.
2. Shapes:
 - a. Cornerbead.
 - b. Bullnose bead.
 - c. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - d. Expansion (control) joint.
 - e. Curved-Edge Cornerbead: With notched or flexible flanges.

B. Exterior Trim: ASTM C 1047.

1. Material: Hot-dip galvanized steel sheet, plastic, or rolled zinc.
2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. Expansion (Control) Joint: One-piece, rolled zinc with V-shaped slot and removable strip covering slot opening.

C. Aluminum Trim: Extruded accessories of profiles and dimensions indicated.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Fry Reglet Corp.
 - b. Gordon, Inc.
 - c. Pitcon Industries.
2. Aluminum: Alloy and temper with not less than the strength and durability properties of **ASTM B 221**, Alloy 6063-T5.
3. Finish: Corrosion-resistant primer compatible with joint compound and finish materials specified.

3.8 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Wallboard: Paper.
2. Exterior Gypsum Soffit Board: Paper.
3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
4. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

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1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
3. Fill Coat: For second coat, use setting-type, sandable topping compound.
4. Finish Coat: For third coat, use setting-type, sandable topping compound.
5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound.

D. Joint Compound for Exterior Applications:

1. Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.
2. Glass-Mat Gypsum Sheathing Board: As recommended by sheathing board manufacturer.

E. Joint Compound for Tile Backing Panels:

1. Cementitious Backer Units: As recommended by backer unit manufacturer.

3.9 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

1. Use adhesives that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from **0.033 to 0.112 inch** thick.
2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.

E. Acoustical Sealant: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

1. Use sealants that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
2. Acoustical Sealant for Exposed and Concealed Joints:
 - a. Pecora Corp.; AC-20 FTR Acoustical and Insulation Sealant.

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- b. United States Gypsum Co.; SHEETROCK Acoustical Sealant.
- 3. Acoustical Sealant for Concealed Joints:
 - a. Ohio Sealants, Inc.; Pro-Series SC-170 Rubber Base Sound Sealant.
 - b. Pecora Corp.; BA-98.
 - c. Tremco, Inc.; Tremco Acoustical Sealant.

3.10 IDENTIFICATION LABELS FOR FIRE- AND SMOKE-PARTITIONS

- A. Identification Labels: Vinyl adhesive signs, to comply with applicable local Code.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Fire Wall Signs, Inc.
 - b. Safety Supply Warehouse.
 - 2. Text: "FIRE AND SMOKE BARRIER – PROTECT ALL OPENINGS"

PART 4 - EXECUTION

4.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames and framing, for compliance with requirements and other conditions affecting performance.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

4.2 PREPARATION

- A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.
 - 1. Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.
- B. Coordination with Sprayed Fire-Resistive Materials:
 - 1. Before sprayed fire-resistive materials are applied, attach offset anchor plates or ceiling runners (tracks) to surfaces indicated to receive sprayed fire-resistive materials. Where offset anchor plates are required, provide continuous plates fastened to building structure not more than **24 inches** o.c.

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2. After sprayed fire-resistive materials are applied, remove them only to extent necessary for installation of non-load-bearing steel framing. Do not reduce thickness of fire-resistive materials below that required for fire-resistance ratings indicated. Protect adjacent fire-resistive materials from damage.

4.3 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754. Also comply with requirements in ASTM C 840 that apply to framing installation.
- B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- C. Install bracing at terminations in assemblies.
- D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

4.4 INSTALLING SUSPENSION SYSTEMS

- A. Install suspension system components in sizes and spacings indicated on Drawings, but not less than those required by referenced installation standards for assembly types and other assembly components indicated.
- B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.
- C. Suspend hangers from building structure as follows:
 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
 - a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
 - a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.
 3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.

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5. Do not attach hangers to steel roof deck.
 6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
 7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
 8. Do not connect or suspend steel framing from ducts, pipes, or conduit.
- D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.
- E. Seismic Bracing: Sway-brace suspension systems with hangers used for support..
- F. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.
- G. Installation Tolerances: Install suspension systems that are level to within [1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

4.5 INSTALLING FRAMED ASSEMBLIES

- A. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- B. Install studs so flanges within framing system point in same direction.
- C. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
 2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on doorframes; install runner track section (for cripple studs) at head and secure to jamb studs.
 - a. Install two studs at each jamb, unless otherwise indicated.
 - b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch clearance from jamb stud to allow for installation of control joint in finished assembly.
 - c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
 3. Other Framed Openings: Frame openings other than door openings the same as required for door openings, unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
 4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
 - a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.

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5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
6. Curved Partitions:
 - a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs. For tight radii, hinged track is acceptable.
 - b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of not less than 2 studs at ends of arcs, place studs **6 inches** o.c.
- D. Direct Furring: Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced **24 inches** o.c.
- E. Z-Furring Members:
 1. Erect insulation vertically and hold in place with Z-furring members spaced **24 inches** o.c.
 2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced **24 inches** o.c.
 3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than **12 inches** from corner and cut insulation to fit.

4.6 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than **1/16 inch** of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than **8 sq. ft.** in area.
 2. Fit gypsum panels around ducts, pipes, and conduits.
 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow **1/4- to 3/8-inch-** wide joints to install sealant.

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- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide **1/4- to 1/2-inch-** wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

4.7 APPLYING INTERIOR GYPSUM BOARD

A. Single-Layer Application:

- 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.
- 2. On partitions/walls, apply gypsum panels to minimize end joints.
- 3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
- 4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

B. Multilayer Application:

- 1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints 1 framing member, **16 inches** minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.
- 2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
- 3. On Z-furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
- 4. Fastening Methods: Fasten base layers and face layers separately to supports with screws.

C. Laminating to Substrate: Where gypsum panels are indicated as directly adhered to a substrate (other than studs, joists, furring members, or base layer of gypsum board), comply with gypsum board manufacturer's written recommendations and temporarily brace or fasten gypsum panels until fastening adhesive has set.

D. Curved Surfaces:

- 1. Install panels horizontally (perpendicular to supports) and unbroken, to extent possible, across curved surface plus **12-inch-**long straight sections at ends of curves and tangent to them.
- 2. For double-layer construction, fasten base layer to studs with screws **16 inches** o.c. Center gypsum board face layer over joints in base layer, and fasten to studs with screws spaced **12 inches** o.c.

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4.8 APPLYING EXTERIOR GYPSUM PANELS FOR CEILINGS AND SOFFITS

- A. Apply panels perpendicular to supports, with end joints staggered and located over supports.
 - 1. Install with 1/4-inch trimmed open joint space where panels abut other construction or structural penetrations.
 - 2. Fasten with corrosion-resistant screws.

4.9 APPLYING TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A108.1, at locations indicated to receive tile, with joints treated to comply with ANSI A108.11.
- B. Areas Not Subject to Wetting: Install regular-type gypsum wallboard panels to produce a flat surface except at showers, tubs, and other locations indicated to receive water-resistant panels.
- C. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

4.10 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Designer for visual effect.
- C. Interior Trim: Install in the following locations:
 - 1. Cornerbead: Use at outside corners, unless otherwise indicated.
 - 2. LC-Bead: Use at exposed panel edges.
 - 3. Curved-Edge Cornerbead: Use at curved openings.
- D. Exterior Trim: Install in the following locations:
 - 1. Cornerbead: Use at outside corners.
 - 2. LC-Bead: Use at exposed panel edges..
- E. Aluminum Trim: Install in locations indicated on Drawings.

4.11 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, rounded or beveled edges, and damaged surface areas.

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- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below:
 - 1. GA Level 1: Ceiling plenum areas and concealed areas not exposed to view.
 - 2. GA Level 2: Panels that are substrate for tile.
 - 3. GA Level 3: Not used.
 - 4. GA Level 4: Panel surfaces that will be exposed to view (typical panels).
 - 5. GA Level 5: Where indicated on Drawings.
- E. Cementitious Backer Units: Finish according to manufacturer's written instructions.

4.12 INSTALLING IDENTIFICATION FOR FIRE- AND SMOKE-PARTITIONS

- A. Marking and Identification for Fire- and Smoke-Partitions: Permanently install as required by Code.

4.13 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, or exhibit mold growth. Repair of damaged panels in place is not acceptable.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

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

SECTION 093010
TILING

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 DESCRIPTION

- A. This section specifies ceramic tile work.

1-03 REFERENCES

- A. Section 078440, JOINT SEALANTS.
- B. Section 092900 , GYPSUM BOARD SYSTEM.

1-04 SUBMITTALS

- A. Submit in accordance with Section 01 33 00, SUBMITTALS.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Selection Samples: Samples of actual tiles and threshold for selection.
- D. Manufacturers Certifications:
 - 1. Certify that products meet or exceed specified requirements.
 - 2. For each shipment, type and composition of tile provide a Master Grade Certificate signed by the manufacturer and the installer certifying that products meet or exceed the specified requirements of ANSI A137.1.
- E. Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.

1-05 QUALITY ASSURANCE

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- A. Installer Qualifications: Company specializing in performing the work of this section with minimum two-year experience.
- B. Single Source Responsibility: Obtain each type and color of tile from a single source. Obtain each type and color of mortar, adhesive and grout from the same source.

1-06 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging until ready for installation.
- B. Protect adhesives and liquid additives from freezing or overheating in accordance with manufacturer's instructions.
- C. Store tile and setting materials on elevated platforms, under cover and in a dry location and protect from contamination, dampness, freezing or overheating.

1-02 EXTRA MATERIALS

- A. Provide for Owner's use a minimum of 5 percent of the colors and types of tile specified, boxed and clearly labeled.
- B. American National Standards Institute (ANSI) (Published by Tile Council of America, Inc.):

A108.1.....Glazed Wall Tile, Ceramic Mosaic Tile, Quarry and
Paver Tile Installed with Portland Cement Mortar

A108.4Ceramic Tile Installed with Organic Adhesives or
Water Cleanable Tile-Setting Epoxy Adhesive

A108.5Ceramic Tile Installed with Dry-Set Portland Cement
Mortar or Latex-Portland Cement Mortar

A108.6Ceramic Tile Installed with Chemical-Resistant,
Water-Cleanable Tile-Setting and Grouting Epoxy

A108.8Ceramic Tile Installed with Chemical-Resistant Furan
Mortar and Grout

A108.9Ceramic Tile Installed with Modified Epoxy Emulsion
Mortar/Grout

A108.10Installation of Grout in Tile work.

A118.1.....Dry-Set Portland Cement Mortar

A118.3Chemical-Resistant, Water-Cleanable Tile-Setting and
Grouting Epoxy and Water-Cleanable Tile-Setting Epoxy
Adhesive

A118.4Latex-Portland Cement Mortar

A118.5Chemical-Resistant Furan Mortars and Grouts

A118.6Ceramic Tile Grouts

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- A118.7..... Polymer Modified Cement Grouts
- A118.8..... Modified Epoxy Emulsion Mortar/Grout.
- A118.9..... Test Methods and Specifications for Cementitious Backer Units
- A118.10..... Load bearing, Bonded, Waterproof Membranes for Thinset Ceramic Tile and Dimensional Stone.
- A118.11..... Exterior Grade Plywood (EGP) Latex-Portland Cement Mortar.
- A136.1 Organic Adhesives for Installation of Ceramic Tile
- A137.1 Ceramic Tile

PART 2 - PRODUCTS

2-01 TILE

- A. General: Provide tile that complies with ANSI A137.1 for types, compositions and other characteristics indicated. Provide tile in the locations and of the types colors and pattern indicated on the drawings and identified in the schedule in this Section. Tile shall also be provided in accordance with the following:
 - 1. Factory Blending: For tile exhibiting color variations within the ranges selected under Submittal of samples, blend tile in the factory and package so tile taken from one package shows the same range of colors as those taken from other packages.
 - 2. Mounting: For factory mounted tile, provide back or edge mounted tile assemblies as standard with the manufacturer, unless otherwise specified.
 - 3. Factory Applied Temporary Protective Coatings: Where indicated under tile type, protect exposed surfaces of tile against adherence of mortar and grout by precoating with a continuous film of petroleum paraffin wax applied hot. Do not coat unexposed tile surfaces.
 - 4. Factory Cut: Tile shall be cut in factor for “true edges” in sizes specified and as shown on drawings.
- B. Wall:
 - 1. Moisture Absorption: Less than .01 percent to less than 20 percent.
 - 2. Trim Units: Cove Base, Cove Nose, Jolly shapes in sizes coordinated with filed tile shapes.
- C. ColorBody Porcelain Tile:
 - 1. Water Absorption: ASTM C373, <0.5% to less than 20 percent.
 - 2. Breaking Strength: ASTM C648, >320 lbs.
 - 3. Scratch Hardness: ASTM MOH's, 6.5.
 - 4. Chemical Resistance: ASTM C650, Resistant.
 - 5. Coefficient of Friction: ASTM C1028, Wet > 0.60, Dry > 0.66.
 - 6. Pattern: As indicated on the drawings.

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7. Trim Units: Matching cove base, cove base corner, cove base outcorner, jolly, shapes in sizes coordinated with field tile.

2-02 CERAMIC FLOOR TILE

- A. Floor Tile in All Restrooms: Nominal 12" x 12" x 3/8" thick.
 1. Product: Haut Monde™ by DalTile or "approved equal".
 2. Color: Matte finish, selected by Owner.
 3. Description: Color Body Porcelain.
 4. Grout Joint Dimension: 1/8", and 3/16" when multiple sizes are installed in a modular pattern, and/or when installing tile with a length 15" or greater in a staggered brick-joint pattern.
- B. Floor Mosaic in Shower: Nominal 2" x 2" x 3/8" thick.
 1. Product: Haut Monde™ by DalTile or "approved equal".
 2. Color: Matte finish, selected by Owner.
 3. Description: Color Body Porcelain.
 4. Grout Joint Dimension: 1/8"

2-03 CERAMIC WALL TILE

- A. Wall Tile in All Restrooms: Nominal 12" x 24" x 3/8" thick.
 1. Product: Haut Monde™ by DalTile or "approved equal".
 2. Color: Polished finish, selected by Owner.
 3. Description: Color Body Porcelain.
 4. Grout Joint Dimension: 1/8", and 3/16" when multiple sizes are installed in a modular pattern, and/or when installing tile with a length 15" or greater in a staggered brick-joint pattern.

2-04 SETTING MATERIALS OR BOND COATS

- A. Conform to TCA Handbook for Ceramic Tile Installation.
- B. Portland Cement Mortar: ANSI A108.1.
- C. Latex-Portland Cement Mortar: ANSI A118.4.
 1. For wall applications, provide non-sagging, latex-Portland cement mortar complying with ANSI A118.4.
 2. Prepackaged Dry-Mortar Mix: Factory-prepared mixture of Portland cement; dry, redispersible, ethylene vinyl acetate additive; and other ingredients to which only water needs to be added at Project site.

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- D. Dry-Set Portland Cement Mortar: ANSI A118.1. For wall applications, provide non-sagging, latex-Portland cement mortar complying with ANSI A118.4.
- E. Organic Adhesives: ANSI A136.1, Type 1.

2-05 GROUTING MATERIALS

- A. Coloring Pigments:
 - 1. Pure mineral pigments, limeproof and nonfading, complying with ASTM C979.
 - 2. Add coloring pigments to grout by the manufacturer.
 - 3. Job colored grout is not acceptable.
 - 4. Use is required in Commercial Portland Cement Grout, Dry-Set Grout, and Latex-Portland Cement Grout.
- B. Commercial Portland Cement Grout: ANSI A118.6 color as specified.
- C. Dry-Set Grout: ANSI A118.6 color as specified.
- D. Latex-Portland Cement Grout: ANSI A118.6 color as specified.
 - 1. Unsanded grout mixture for joints 3.2 mm (1/8 inch) and narrower.
 - 2. Sanded grout mixture for joints 3.2 mm (1/8 inch) and wider.
- E. Color to be selected from manufacturer's full range of colors.

2-06 PATCHING AND LEVELING COMPOUND

- A. Portland cement base, polymer-modified, self-leveling compound, manufactured specifically for resurfacing and leveling concrete floors. Products containing gypsum are not acceptable.
- B. Shall have minimum following physical properties:
 - 1. Compressive strength - 3500 psig per ASTM C109/C109M.
 - 2. Flexural strength - 1000 psig per ASTM C348 (28 day value).
 - 3. Tensile strength - 600 psi per ANSI 118.7.
 - 4. Density – 1.9.
- C. Capable of being applied in layers up to 1-1/2 inches thick without fillers and up to four inches thick with fillers, being brought to a feather edge, and being trowelled to a smooth finish.

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- D. Primers, fillers, and reinforcement as required by manufacturer for application and substrate condition.
- E. Ready for use in 48 hours after application.

2-07 METAL EDGES

- A. Bullnose Profile (Outside Corners):
 - 1. Schluter®-RONDEC, or approved equal. bullnose-type profile with symmetrically rounded visible surface with 1/4 inch radius, integrated trapezoid-perforated anchoring leg, and integrated grout joint spacer.
 - 2. Material and Finish: Brushed chrome anodized aluminum.

2-08 WATER

- A. Clean, potable and free from salts and other injurious elements to mortar and grout materials.

2-09 CLEANING COMPOUNDS

- A. Specifically designed for cleaning masonry and concrete and which will not prevent bond of subsequent tile setting materials including patching and leveling compounds and elastomeric waterproofing membrane and coat.
- B. Materials containing acid or caustic material not acceptable.

2-10 SEALER

- A. High performance transparent penetrating silicone sealer for ceramic tile and grout.
- B. Manufacturer: “Super- Sealcote” by Super-Tek Products or approved equal.

PART 3 - EXECUTION

3-01 ENVIRONMENTAL REQUIREMENTS

- A. Maintain ambient temperature of work areas at not less than 60 degrees F, without interruption, for not less than 24 hours before installation and not less than seven days after installation.
- B. Maintain higher temperatures for a longer period of time where required by manufacturer's recommendation and ANSI Specifications for installation.

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- C. Do not install tile when the temperature is above 100 degrees F.
- D. Do not install materials when the temperature of the substrate is below 60 degrees F.
- E. Do not allow temperature to fall below 50 degrees F after fourth day of completion of tile work.
- F. Do not install adhesives in an unventilated environment.

3-02 EXAMINATION

- A. Verify that wall surfaces are free of substances which would impair bonding of setting materials, smooth and flat within tolerances specified in ANSI A137.1, and are ready to receive tile.
- B. Verify that sub-floor surfaces are dust-free, and free of substances which would impair bonding of setting materials to sub-floor surfaces, and are smooth and flat within tolerances specified in ANSI A137.1.
- C. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.
- D. Verify that required floor-mounted utilities are in correct location.

3-03 ALLOWABLE TOLERANCE

- A. Variation in plane of sub-floor, including concrete fills leveling compounds and mortar beds:
 - 1. Not more than 1/4 inch in 10 feet from required elevation where Portland cement mortar setting bed is used.
 - 2. Not more than 1/8 inch in 10 feet where dry-set Portland cement, and latex-Portland cement mortar setting beds and chemical-resistant bond coats are used.
- B. Variation in Plane of Wall Surfaces:
 - 1. Not more than 1/4 inch in eight feet from required plane where Portland cement mortar setting bed is used.
 - 2. Not more than 1/8 inch in eight feet where dry-set or latex-Portland cement mortar or organic adhesive setting materials is used.

3-04 SURFACE PREPARATION

- A. Cleaning New Concrete or Masonry:
 - 1. Chip out loose material, clean off all oil, grease dirt, adhesives, curing compounds, and other deterrents to bonding by mechanical method, or by using products specifically designed for cleaning concrete and masonry.
 - 2. Use self-contained power blast cleaning systems to remove curing compounds and steel trowel finish from concrete slabs where ceramic tile will be installed directly on concrete surface with thin-set materials.
 - 3. Steam cleaning or the use of acids and solvents for cleaning will not be permitted.
- B. Patching and Leveling:
 - 1. Mix and apply patching and leveling compound in accordance with manufacturer's instructions.
 - 2. Fill holes and cracks and align concrete floors that are out of required plane with patching and leveling compound.
 - a. Thickness of compound as required to bring finish tile system to elevation shown.
 - b. Float finish except finish smooth for elastomeric waterproofing.
 - c. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through underlayment.
 - 3. Apply patching and leveling compound to concrete and masonry wall surfaces that are out of required plane.
 - 4. Apply leveling coats of material compatible with wall surface and tile setting material to wall surfaces, other than concrete and masonry that are out of required plane.
- C. Mortar Bed for Slopes to Drains:
 - 1. Slope compound to drain where drains are shown.
 - 2. Install mortar bed in depressed slab sloped to drains not less than 1/16 inch per foot.
 - 3. Allow not less than 2 inch depression at edge of depressed slab.
 - 4. Screed for slope to drain and float finish.
 - 5. Cure mortar bed for not less than seven days. Do not use curing compounds or coatings.
- D. Additional preparation of concrete floors for tile set with epoxy, or furan-resin shall be in accordance with the manufacturer's printed instructions.
- E. Cleavage Membrane:

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1. Install polythene sheet as cleavage membrane in depressed slab when waterproof membrane is not scheduled or indicated.
2. Turn up at edge of depressed floor slab to top of floor.

F. Walls:

1. Apply patching and leveling compound to concrete and masonry surfaces that are out of required plane.
2. Apply leveling coats of material compatible with wall surface and tile setting material to wall surfaces, other than concrete and masonry that are out of required plane.

3-05 METAL DIVIDER STRIPS

- A. Install metal divider strips in floor joints between ceramic and quarry tile floors and between tile floors and adjacent flooring of other materials where the finish floors are flush unless shown otherwise.
- B. Set divider strip in mortar bed to line and level centered under doors or in openings.

3-06 CERAMIC TILE – GENERAL

- A. Comply with ANSI A108 series of tile installation standards in "Specifications for Installation of Ceramic Tile" applicable to methods of installation.
- B. Comply with TCA Installation Guidelines.
- C. Setting Beds or Bond Coats:
 1. Where recessed or depressed floor slabs are filled with Portland cement mortar bed, set ceramic mosaic floor tile in either Portland cement paste over plastic mortar bed or latex-Portland cement mortar over cured mortar bed except as specified otherwise, ANSI A108-1C, TCA System F121-02 or F111-02.
 2. Set wall tile installed over concrete or masonry in dry-set Portland cement mortar, or latex-Portland cement mortar, ANSI 108.1B.and TCA System W211-02, W221-02 or W222-02.
 3. Set wall tile installed over concrete backer board in latex-Portland cement mortar, ANSI A108.1B.
 4. Set wall tile installed over Portland cement mortar bed on metal lath base in Portland cement paste over plastic mortar bed, or dry-set Portland cement mortar or latex-Portland cement mortar over a cured mortar bed, ANSI A108.1C, TCA System W231-02, W241-02.
 5. Set tile installed over gypsum board and gypsum plaster in organic adhesive, ANSI A108.4, TCA System W242-02.

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6. Set trim shapes in same material specified for setting adjoining tile.

D. Workmanship:

1. Lay out tile work so that no tile less than one-half full size is used. Make all cuts on the outer edge of the field.
2. Set tile firmly in place with finish surfaces in true planes. Align tile flush with adjacent tile unless shown otherwise.
3. Form intersections and returns accurately.
4. Cut and drill tile neatly without marring surface.
5. Cut edges of tile abutting penetrations, finish, or built-in items:
 - a. Fit tile closely around electrical outlets, piping, fixtures and fittings, so that plates, escutcheons, collars and flanges will overlap cut edge of tile.
 - b. Seal tile joints water tight as specified in Section 079000, SEALANT AND CAULKING, around electrical outlets, piping fixtures and fittings before cover plates and escutcheons are set in place.
6. Completed work shall be free from hollow sounding areas and loose, cracked or defective tile.
7. Remove and reset tiles that are out of plane or misaligned.
8. Floors:
 - a. Extend floor tile beneath casework and equipment, except those units mounted in wall recesses.
 - b. Align finish surface of new tile work flush with other and existing adjoining floor finish where shown.
 - c. In areas where floor drains occur, slope to drains where shown.
 - d. Shove and vibrate tiles over 8 inches square to achieve full support of bond coat.
9. Walls:
 - a. Cover walls and partitions, including pilasters, furred areas, and freestanding columns from floor to ceiling, or from floor to nominal wainscot heights shown with tile.
 - b. Finish reveals of openings with tile, except where other finish materials are shown or specified.
 - c. At window openings, provide tile stools and reveals, except where other finish materials are shown or specified.
 - d. Finish wall surfaces behind and at sides of casework and equipment, except those units mounted in wall recesses, with same tile as scheduled for room proper.
10. Back Buttering: For installations indicated below, obtain 100 percent mortar coverage by complying with applicable special requirements for back buttering of tile in referenced ANSI A108 series of tile installation standards:
 - a. Tile wall installations in wet areas, including showers, tub enclosures, laundries and swimming pools.

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- b. Tile installed with chemical-resistant mortars and grouts.
- c. Tile wall installations composed of tiles 200 by 200 mm (8 by 8 inches or larger).
- d. Exterior tile wall installations.

3-07 CERAMIC TILE INSTALLED WITH PORTLAND CEMENT MORTAR

- A. Mortar Mixes for Floor, Wall and Base Tile (including Showers): ANSI A108.1, except specified otherwise.
- B. Installing Wall and Base Tile: ANSI A108.1, except specified otherwise.

3-08 PORCELAIN TILE INSTALLED WITH LATEX PORTLAND CEMENT BONDING MORTAR

- A. Due to the denseness of porcelain tile use latex Portland cement bonding mortar that meets the requirements of ANSI A118.4. Bonding mortars shall be mixed in accordance with manufacturer's instructions. Improper liquid ratios and dwell time before placement of bonding mortar and tile shall affect bond.

3-09 GROUTING

- A. Grout Type and Location:
 - 1. Grout for base tile, paver tile and unglazed mosaic tile, use Portland cement grout, latex-Portland cement grout, dry-set grout, or commercial Portland cement grout.
- B. Workmanship:
 - 1. Install and cure grout in accordance with the applicable standard.
 - 2. Portland Cement grout: ANSI A108.10.

3-10 CLEANING

- A. Thoroughly sponge and wash tile. Polish glazed surfaces with clean dry cloths.
- B. Methods and materials used shall not damage or impair appearance of tile surfaces.
- C. The use of acid or acid cleaners on glazed tile surfaces is prohibited.

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- D. Clean tile grouted with epoxy, furan and commercial Portland cement grout and tile set in elastomeric bond coat as recommended by the manufacturer of the grout and bond coat.

3-11 PROTECTION

- A. Keep traffic off tile floor, until grout and setting material is firmly set and cured.
- B. Where traffic occurs over tile floor, cover tile floor with not less than 3/8 inch thick plywood, wood particle board, or hardboard securely taped in place. Do not remove protective cover until time for final inspection. Clean tile of any tape, adhesive and stains.
- C. Seal all tile 14 calendar days after grout has cured.

3-12 TESTING

- A. Test walls in accordance with ASTM C627 to show compliance with codes 1 through 10.

3-13 MAINTENANCE SUPPLY

- A. Provide Owner with one (1) full, unopened case of ceramic wall, and (1) full, unopened case of ceramic floor tile for future maintenance and repair.

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

SECTION 096700
EPOXY (SEAMLESS QUARTZ) FLOORING

PART 1 - GENERAL

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1-01 SUMMARY

- A. Section Includes seamless epoxy surfacing material, integral base, including surface preparation, leveling course, primers and finish coats. Work includes:
 - 1. 1/8 inch floor with high solids top coat for general application.
 - 2. Scope includes new rooms in the bathhouse.

1-02 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Include installation requirements. Include plans, elevations, sections, component details, and attachments to other work. Show layout of the following:
 - 1. Control Joint Details
 - 2. Wall Base Details
 - 3. Transition Details
- C. Samples for Initial Selection: As a basis for reference, color shall be assumed to be equivalent to Duraflex Q11-17. The final color must be approved by DMH.
- D. Installer Certificates: Signed by manufacturers certifying that installers comply with requirements.
- E. Qualification Data: For qualified Installer.
- F. Material Certificates: For each type of epoxy flooring material or product, from manufacturer.
- G. Maintenance Data: For epoxy flooring to include in maintenance manuals.

1-03 QUALITY ASSURANCE

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- A. Installer Qualifications: A qualified installer who is acceptable to epoxy flooring manufacturer to install manufacturer's products.
- B. Source Limitations: Obtain primary epoxy materials from one source from a single manufacturer. Provide secondary materials including patching and fill material, joint sealant, and repair materials of type and from source recommended by manufacturer of primary materials.

1-04 DELIVERY STORAGE AND HANDLING

- A. Deliver material to job site in clean, clearly labeled containers and inspect prior to start of job.
- B. Store material in a dry, enclosed area protected from the elements. Keep temperature of storage area between 60° and 90° F.

1-05 ENVIRONMENTAL REQUIREMENTS

- A. Follow manufacturer's guidelines for minimum concrete curing and moisture testing requirements before proceeding with flooring installation.
- B. Verify that substrate is properly equipped with vapor barriers and perimeter drains.
- C. Verify supply of adequate utilities, including electric, water, heat (between 60o and 90o F.) and lighting of no less than 80 ft candles measured at floor surface.
- D. Free work area of other trades during, and for a period of 24 hours, after floor installation.
- E. Protect finished floor from damage by subsequent trades.

1-06 WARRANTY

- A. Submit a one-year warranty against defects in material and workmanship upon substantial completion of installation.

PART 2 - PRODUCTS

2-01 BASIS-OF-DESIGN

- A. Basis-of-Design Product: Subject to compliance with requirements, provide epoxy flooring by DUR-A-FLEX, INC. or a comparable product by one of the following:
 - 1. DEX-O-TEX by CrossField Products, Corp.
 - 2. Crown Polymers, LLC
 - 3. Or approved equal.
- B. Standard Flooring: Dur-A-Flex, Inc, Hybri-Flex EQ (self leveling broadcast quartz), epoxy/aliphatic urethane topcoat seamless flooring system.
 - 1. System Materials:
 - a. Topping: Dur-A-Flex, Inc, Poly-Crete MD resin, hardener and SL aggregate.
 - b. The broadcast aggregate shall be Dur-A-Flex, Inc. Q11 quartz aggregate.
 - c. Broadcast: Dur-A-Flex, Inc. Dur-A-Glaze #4, epoxy based two-component resin.
 - d. Seal coats: Dur-A-Flex, Inc Dur-A-Glaze #4, epoxy-based, two-component resin.
 - e. Top coat: Dur-A-Flex, Inc. Poly-Thane 2HS aliphatic urethane 2 component resin.
 - 2. Patch Materials
 - a. Shallow Fill and Patching: Use Dur-A-Flex, Inc. Poly-Crete MD (up to ¼ inch).
 - b. Deep Fill and Sloping Material (over ¼ inch): Use Dur-A-Flex, Inc. Poly-Crete WR.

2-02 BASIS OF DESIGN PRODUCT REQUIREMENTS

- | | | |
|----|--|---------------------------|
| A. | Topping | Poly-Crete SL |
| 1. | Percent Reactive | 100 % |
| 2. | VOC | 0 g/L |
| 3. | Bond Strength to Concrete ASTM D 4541 | 400 psi, substrates fails |
| 4. | Compressive Strength, ASTM C579 | 7,250 psi |
| 5. | Tensile Strength, ASTM D 638 | 750 psi |
| 6. | Flexural Strength, ASTM D 790 | 4,400 psi |
| 7. | Impact Resistance @ 125 mils, MIL D-3134, 160 inch lbs | |
| 8. | No visible damage or deterioration | |
| B. | Broadcast Coat | Dur-A-Glaze #4 Resin |
| 1. | Percent Reactive, | 100 % |

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- | | | |
|----------------------------|---|------------------------------|
| 2. | VOC | <4 g/L |
| 3. | Water Absorption, ASTM D 570 | 0.04% |
| 4. | Tensile Strength, ASTM D 638 | 4000psi |
| 5. | Coefficient of thermal expansion
ASTM D 696, | 2 x 10 ⁻⁵ in/in/F |
| 6. | Flammability ASTM D-635 | Self-Extinguishing |
| 7. | Flame Spread/ NFPA 101 ASTM E-84 | Class A |
| C. Topcoat Poly-Thane 2 HS | | |
| 1. | VOC | 320.8 g/L |
| 2. | 60 Degree Gloss ASTM D523 | 90+ |
| 3. | Tensile strength, ASTM D 638 | 7,000 psi |
| 4. | Elongation ASTM D2370 | 9% |
| 5. | Abrasion Resistance ASTM D-460 | 10 mg loss |
| 6. | CS 17 1,000 gm load, 1,000 cycles | |
| 7. | Potlife @ 68 F | 2 hours |
| 8. | Dry properties, 72°F, 50% R.H. | 6-8 hours |
| 9. | hard Dry | 12 hours |
| 10. | Full Chemical resistance | 7 days |

2-03 PRODUCT MIXING

- A. Mix on site with manufacturer supplied mixing and measure apparatus to ensure a timely, accurate mix ratio and minimize waste.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Moisture Testing: Perform anhydrous calcium chloride test ASTM F 1869-98.
1. Perform three tests for the first 1,000 sf and then one test per 1,000 sf after that.
 2. Application will proceed only when the vapor/moisture emission rates from the slab is less than and not higher than 12 lbs/1,000 sf/24 hrs.
 3. If the vapor drive exceeds 12 lbs/1,000 sf/24 hrs provide a vapor mitigation system that has been approved by the manufacturer or other means to lower the value to the acceptable limit.

3.2 PREPARATION

- A. Follow the manufacturer surface preparation requirements.
- B. Floor areas inaccessible to the mobile blast machines shall be mechanically abraded to the same degree of cleanliness, soundness and profile using diamond grinders, needle guns, bush hammers, or other suitable equipment.
- C. Where the perimeter of the substrate to be coated is not adjacent to a wall or curb, a minimum 1/4 inch key cut shall be made to properly seat the system, providing a smooth transition between areas. The detail cut shall also apply to drain perimeters and expansion joint edges

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- D. Cracks and joints (non-moving) greater than 1/8 inch wide are to be chiseled or chipped-out and repaired per manufacturer's recommendations.
- E. Verify that surface is dry and perfectly clean, free of all oil, grease, detergent film, sealers and/or curing compounds.

3.3 INSTALLATION – STANDARD FLOORING

- A. General: The system shall be applied in five distinct steps as listed below:
 - 1. Substrate preparation
 - 2. Topping/overlay application with quartz aggregate broadcast.
 - 3. Resin application with quartz aggregate broadcast.
 - 4. Topcoat application
 - 5. Second topcoat application.
 - 6. Immediately prior to the application of any component of the system, the surface shall be dry and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil-free compressed air.
 - 7. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.
 - 8. The system shall follow the contour of the substrate unless pitching or other leveling work has been specified by the Architect.
 - 9. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.
- B. Topping
 - 1. The topping shall be applied as a self-leveling system as specified by the Architect. The topping shall be applied in one lift with a nominal thickness of 1/8 inch.
 - 2. The topping shall be comprised of three components, a resin, hardener and filler as supplied by the Manufacturer.
 - 3. The hardener shall be added to the resin and thoroughly dispersed by suitably approved mechanical means. SL Aggregate shall then be added to the catalyzed mixture and mixed in a manner to achieve a homogenous blend.
 - 4. The topping shall be applied over horizontal surfaces using 1/2 inch "v" notched squeegee, trowels or other systems approved by the Manufacturer.
 - 5. Immediately upon placing, the topping shall be degassed with a loop roller.
 - 6. Quartz aggregate shall be broadcast to excess into the wet material at the rate of 0.8 lbs/sf.
 - 7. Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.
- C. Broadcast
 - 1. The broadcast coat resin shall be applied at the rate of 50 sf/gal.

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2. The broadcast coat shall be comprised of liquid components, combined at a ratio of 2 parts resin to 1 part hardener by volume and shall be thoroughly blended by mechanical means such as a high speed paddle mixer.
 3. Quartz aggregate shall be broadcast into the wet resin at the rate of 0.5 lbs/sf.
 4. Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.
- D. Topcoat
1. The first topcoat shall be squeegee applied with a coverage rate of 50 sf/gal.
 2. The topcoat shall be comprised of liquid components, combined at a ratio of 2 parts resin to 1 part hardener by volume and shall be thoroughly blended by mechanical means such as a high speed paddle mixer.
 3. The first topcoat will be back rolled and cross rolled to provide a uniform texture and finish
- E. The second topcoat shall be roller applied with a coverage rate of 300 sf/gal.
- F. The finish floor will have a nominal thickness of 1/4 inch.

3.4 CLEANING AND PROTECTION

- A. Cleaning:
1. Remove debris and application materials from installation and adjacent areas.
 2. Wash surfaces with cleaner according to written recommendations and manufacturer's written instructions; rinse surfaces with water and allow to dry thoroughly.
- B. Protection: Provide final protection and maintain conditions, in a manner acceptable to Installer, that ensure that epoxy flooring is without damage or deterioration at time of Substantial Completion.

PART 4 – BASIS OF PAYMENT

- A. Payment for “Epoxy Flooring” shall be paid for under the contract Lump Sum Bid Price, which shall include all labor, tools, materials, equipment, transportation and all other incidental work as necessary to provide a complete and proper product.

END OF SECTION

SECTION 096702
RIGID-SHEET VINYL WALL (& CEILING) COVERING
(Commercial Vinyl Wall Covering)

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This section includes labor, materials and other services necessary to complete vinyl wall coverings.
- B. Conform with requirements of all Sections of Division 1, General Requirements, as it applies to the work of this Section.

1.02 REFERENCES

- A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.
- B. American Society for Testing & Materials (ASTM):
 - 1. AST ASTM E 84-05 Standard Test Method for Surface Burning Characteristics of Building Materials. CLASS A
 - 2. ASTM D5420 Gardner Impact Exceeds 160 inch pounds
 - 3. ISO 14644 - 9:12 Standard Laboratory Practice for Quantifying Air Cleanliness by Particle Concentrations
 - 4. CA 01350 – Measures VOC emissions produced by product
 - 5. DIN IEC 60 167 – Surface resistance
 - 6. ASTM G21 – Fungi resistance
 - 7. ASTM D3273 – Mold resistance
 - 8. ISO 62 – Water absorption
 - 9. ASTM G154 – UV exposure

1.03 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide hygienic Altro Whiterock wall covering which has been manufactured by Altro and installed to maintain performance criteria stated by manufacturer without defects, damage or failure.

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1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's current printed product literature, specifications, installation instructions, and field reports in accordance with Section 01330 - Submittal Procedures.
- B. Shop Drawings: Submit shop drawings to indicate materials, details, and accessories in accordance with Section 01330 - Submittal Procedures including but limited to the following:
 - 1. Submit a layout diagram indicating the location of each panel and joining method.
- C. Samples: Submit duplicate sample pieces of Altro Whiterock material, as well as accessory pieces in accordance with Section 01330 - Submittal Procedures.
- D. Quality Assurance Submittals: Submit the following:
 - 1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
 - 2. Manufacturer's Instructions: Current published manufacturer's installation and maintenance instructions.
 - 3. Manufacturer's Field Reports: Specified herein.
- E. Closeout Submittals: Submit the following:
 - 1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.
 - 2. Warranty: Warranty documents specified herein.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project with a minimum of 3 years experience.
 - 1. Training: Installer who has attended an Altro Whiterock installation training clinic and has received their certificate of course completion.
- B. Mock-ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner's and Consultant's acceptance of finish color, texture and pattern, and workmanship standards.
 - 1. Mock-Up Size: 12"X12"
 - 2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.

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3. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.

- C. Pre-installation Meeting: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements.

1.06 DELIVERY, STORAGE & HANDLING

- A. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- B. Deliver, store and handle Altro Whiterock wall panels in accordance with Section 01610 - Basic Material Requirements.
- C. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- D. Store materials protected from exposure to harmful weather conditions, at temperature and humidity conditions recommended by manufacturer. Panels should be stored flat and be pre-conditioned a minimum of 24 hours in ambient temperatures similar to the prevailing operational conditions.
- E. Store panels in temperature controlled environments. Leave protective blue film on panel and keep panels stored flat on pallet until ready to use. Storage on uneven surfaces could cause the panels to distort prior to installation.

1.07 WASTE MANAGEMENT AND DISPOSAL

- A. Deposit all packaging materials in appropriate container on site for recycling or reuse.
- B. Avoid using landfill waste disposal procedures when recycling facilities are available.
- C. Keep all discarded packaging away from children.

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1.08 PROJECT CONDITIONS

- A. Temperature Requirements: If storage temperature is below 65F (18C), the Altro Whiterock wall panel must be moved to a warmer place and allowed to reach this temperature before installation. For further information, refer to current Installation Guide.
- B. Maintain air temperature and structural base temperature at installation area between 65F (18C) and 80F (26C) for 48 hours before, during and 24 hours after installation.

1.9 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 warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
- C. Warranty Period for Altro Whiterock shall be 20 years commencing on Date of Substantial Completion.

1.10 EXTRA MATERIALS

- A. Provide extra materials of product and adhesives in accordance with Section 01780 - Closeout Submittals.
- B. Provide 5 sq.ft of each color, pattern and type material required for project for maintenance use.
- C. Provide 5 sq.ft of extra materials in one piece and from same production run as installed materials.
- D. Clearly identify each wall panel and each container of adhesive.
- E. Deliver to Consultant, upon completion of the work of this section and store where directed.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturer: Altro
 - 1. USA: 80 Industrial Way, Wilmington, MA 01887
Toll-free: 800.377.5597 Fax: 978.694.0433
 - 3. E-mail: support@altrofloors.com Web Site: www.altrofloors.com.
- B. Manufacturer: Or Equivalent manufacturers may be submitted for review and approval by the Owner

2.02 HYGIENIC WALL COVERINGS

- A. Altro Whiterock™ is 100% pure vinyl, extruded, semi-rigid PVCu sheet. Altro Whiterock contains no plasticizers or fillers. Altro Whiterock is homogenous.
- B. Acceptable material: Altro Whiterock™ (measurements and product weights given below are approximate):

Colors:

Standard White 3 / 4: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).

Satins:

- 1. Linen 41: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
- 2. Oyster 32: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
- 3. Fenland 219: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
- 4. Promenade 212: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
- 5. Flint 201: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24

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lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).

6. Ice 44: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
7. Seafoam 43: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
8. Cesco 53: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
9. Echo 208: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
10. Urban 210: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
11. Fawn 206: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
12. Mint 203: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
13. Ozone 211: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
14. Vibrance 213: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
15. Olea 218: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
16. Bergamot 220: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).

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17. Zandra 217: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
18. Viola 214: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).
19. Scarlett 221: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8'2" or 9' 10.25" (2.5m or 3m); Weight 4'x8'2" Panel: 24 lbs (10.7 kg) Weight 4'x9' 10.25" Panel: 28 lbs (12.8 kg).

2.03 ACCESSORIES

- A. Vinyl welding rod: Acceptable material:
 1. Altro weld rod – WSR01 White, WSR/** color
- B. Joint Strips:
 1. 1-Part Joint Strip – [G831/25 White] Length 98.5"
 2. 1-Part Joint Strip – [G831/30 White] Length 118"
 3. 2-Part Joint Strip – [A831/25 White] [A831/25/** color] Length 98.5"
 4. 2-Part Joint Strip – [A831/30 White] [A831/30/** color] Length 118"
- C. Cut-Tile Transition Strips:
 1. 1-Part Transition Strip – [G832/25 White] Length 98.5"
 2. 2-Part Joint Strip – [A832/25 White] [G831/30/** color] Length 98.5"
 3. C4 CAP Strip – [C4 CAP White] Length 72"
- D. Start and Edge Trim:
 1. 1-Part Start and Edge Trim – [G833/25 White] Length 98.5"
 2. 1-Part Start and Edge Trim – [G833/30 White] Length 118"
 3. 2-Part Start and Edge Trim – [A833/25 White] [A833/25/** color] Length 98.5"
 4. 2-Part Start and Edge Trim – [A833/30 White] [A833/30/** color] Length 118"
- E. Stainless Steel Accessories:
 1. Stainless Steel Corner Protector – [A861/12 Brushed Steel] Dimensions: 4' x 3" x 3"
 2. 1-Part Stainless Steel Joint Strip – [A855 Brushed Steel] Length 7'
 3. Stainless Steel Capping – [A865 Brushed Steel] Length 8'
 4. 18 Gauge Stainless Steel 304 Sheet – [W123/20 Brushed Steel] 6'6" X3'3"
 5. 18 Gauge Stainless Steel 304 Sheet – [W123/25 Brushed Steel] 8'2" X4'
- F. Acrylic Adhesive: For dry, climate controlled areas, use AltroFix W157, a one-

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part, water-based, acrylic adhesive as recommended by manufacturer.

- G. Polyurethane Adhesive: The default adhesive for most installations, suitable for wet area, non-climate controlled areas, and non-absorbent surfaces, use AltroFix W39, a two-part resin-based polyurethane adhesive as recommended by manufacturer.
- H. Caulking and Sanitary Sealant Sealant Compounds and Tools:
 - 1. Altro Sanitary Sealant – [A802 White, A803 Clear, A806/** color) 10.5 oz Tube

2.04 SOURCE QUALITY

- A. Source Quality: Obtain wall products from a single manufacturer.

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog, installation instructions and product label instructions for installation.

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

SUBSTRATE PREPARATION

- A. Walls should be smooth and level. High points must be removed and low points filled with filler intended for the substrate and environmental conditions.
- B. Wall tiles must be fixed firmly to the wall. As long as the tile edges do not protrude, you do not have to skim grout joints.
- C. Surfaces must be permanently dry and free from all substances that may contribute to adhesive bond failure.
- D. Remove loose paint and conduct an adhesive bond test with paint.
- E. Exterior walls must be adequately damp-proofed and insulated.
- F. Dry wall substrates should be paint ready.

3.04 PREPARATION

- A. All surfaces must be free from dust and cleaned prior to Altro Whiterock installation. The working environment must also be dust free. Failure to comply with these conditions will reduce the bond strength between the adhesive and substrate, and may cause the Altro Whiterock panels to debond.
- B. Very absorbent / porous substrates (particularly plaster finishes and unprimed sheetrock) must have a proprietary sealer e.g. PVA primer or similar, applied to the surface a minimum of 12 hours prior to the installation.
- C. All electrical switches, power points etc., should be in a first fix / installation state. All electrical equipment should only be moved or altered by a qualified electrician.
- D. All plumbing should have pipe-work removed to a first fix or installation state and "tails" left protruding from the substrate. Altro Whiterock panels can then be

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drilled and slid over the pipe tails. All holes should be drilled 1/8" (3mm) oversize to allow for expansion, then sealed with Altro Sanitary Sealant. Plumbing should always be done by a qualified plumber.

- E. Hot pipes and steam pipes should be insulated and a 1/8" to 1/4" (3-6mm) expansion gap should be created when installing panels around these pipes, then sealed with Altro Sanitary Sealant.
- F. All pipes, fixing bolts, etc. extending through the Altro Whiterock panels should have a minimum 1/8" (3mm) expansion gap and be sealed using Altro Sanitary Sealant.
- G. If fitting to doorframes, these must be in place prior to installation of Altro Whiterock.
- H. Prior to installation, it is advisable to complete any painting which comes in contact with Altro Whiterock, as sealant used at junctions is non-paintable.
- I. First, check the room using a 6' (2 m) level to ensure all walls are flat, paying particular attention to the corners, window reveals, and door entrances. These need to be inspected to ensure they are free of any debris or irregularities, which could prevent the panels laying flat to the substrate after the adhesive has been applied and the panel installed.

3.05 INSTALLATION

- A. Hygienic Wall Installation: Install Altro Whiterock in accordance with the current published Altro Installation Guide. All panels should be joined via heat welding to ensure a hygienic seal by approved methods as detailed in the installation guide. Failure to install Altro Whiterock in accordance with recommended procedures will void the Altro Limited Product Warranty.
- B. Internal and external pencil radius corners shall be made on site with Altro Thermoformer following the methods detailed in the Altro Whiterock Installation Guide.

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3.06 FIELD QUALITY REQUIREMENTS

- A. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
 - 1. Site Visits: [Specify number and duration of periodic site visits.].

3.07 CLEANING

- A. Altro Whiterock can be cleaned with a diluted soap/detergent solution, such as Altro 44 Cleaner.
- B. When cleaning the Altro Whiterock surface, we recommend the temperature of water does not exceed 140° F (60° C).
- C. Use cleaning materials compliant with USP regulations, including synthetic, non-shedding mops and specified chemical solutions. Manual unidirectional strokes are recommended to avoid spreading contaminants during cleaning process. Sanitized water is also necessary to thoroughly rinse surfaces.
- D. To reduce the buildup of static, cleaning the panels with an anti-static solution is recommended.
- E. Stubborn stains use AltroClean 44 cleaner or equivalent alkaline cleaner.
- F. Remove construction debris from project site and legally dispose of debris.

PROTECTION

- A. Do not install near open heat sources (ovens, etc). Stainless steel panels should be used in such areas.

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

SECTION 099123
INTERIOR PAINTING

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. Section includes surface preparation and the application of paint systems on the following interior substrates:
 - 1. Steel.
 - 2. Galvanized metal.
 - 3. Gypsum board.

1-03 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
 - 1. Indicate VOC content.
- B. Sustainable Design Submittals:
 - 1. Product Data for LEED 2009 Credit EQ 4.2: For paints and coatings, showing printed statement of VOC content.
- C. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.
 - A. Submit Samples on rigid backing, 8 inches (200 mm) square.
 - B. Label each coat of each Sample.
 - C. Label each Sample for location and application area.
- D. Product List: For each product indicated, include the following:
 - 1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
 - 2. Indicate VOC content.

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1-04 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: 1 gal. (3.8 L) of each material and color applied.

1-05 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Contractor will select one surface to represent surfaces and conditions for application of each paint system specified in Part
2. Final approval of color selections will be based on mockups.
 - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Owner at no added cost.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Designer specifically approves such deviations in writing.

1-06 DELIVERY, STORAGE, AND HANDLING

- A. Delivery and Handling: Deliver products to Project site in an undamaged condition in manufacturer's original sealed containers, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Packaging shall bear the manufacturer's label with the following information:

1. Product name and type (description).
2. Batch date.
3. Color number.
4. VOC content.
5. Environmental handling requirements.
6. Surface preparation requirements.
7. Application instructions.

- B. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

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1-07 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 – PRODUCTS

2-01 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Sherwin-Williams Company products indicated or approved equal.
- B. Comparable Products: Comparable products of approved manufacturers will be considered in accordance with Section 016000 "Product Requirements," and the following:
 - 1. Products are approved by manufacturer in writing for application specified.
 - 2. Products meet performance and physical characteristics of basis of design product including published ratio of solids by volume, plus or minus two percent.
- C. Source Limitations: Obtain paint materials from single source from single listed manufacturer.
 - 1. Manufacturer's designations listed on a separate color schedule are for color reference only and do not indicate prior approval.

2-02 PAINT, GENERAL

- A. Material Compatibility:
 - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- B. VOC Content: For field applications that are inside the weatherproofing system, paints and coatings shall provide materials that comply with VOC limits of

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authorities having jurisdiction and for interior paints and coatings applied at Project site, the following VOC limits exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Flat Paints and Coatings: 50 g/L.
 2. Nonflat Paints and Coatings: 150 g/L.
 3. Primers, Sealers, and Undercoaters: 200 g/L.
 4. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
 5. Floor Coatings: 100 g/L.
 6. Shellacs, Clear: 730 g/L.
 7. Shellacs, Pigmented: 550 g/L.
- C. Low-Emitting Materials: Interior paints and coatings 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."
- D. Colors: As selected by Designer from manufacturer's full range to match existing.

2-03 SOURCE QUALITY CONTROL

- A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:
1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
 2. Testing agency will perform tests for compliance with product requirements.
 3. Owner may direct Contractor to stop applying coatings if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 – PRODUCTS

3-01 EXECUTION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work. Verify suitability of substrates, including surface

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conditions and compatibility with existing finishes and primers. Where acceptability of substrate conditions is in question, apply samples and perform in-situ testing to verify compatibility, adhesion, and film integrity of new paint application.

B. Substrate Conditions:

1. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - a. Gypsum Board: 12 percent.
2. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

C. Proceed with coating application only after unsatisfactory conditions have been corrected; application of coating indicates acceptance of surfaces and conditions.

3-02 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

3-03 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
 1. Use applicators and techniques suited for paint and substrate indicated.

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2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3-04 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
1. Contractor shall touch up and restore painted surfaces damaged by testing.
 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3-05 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

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- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3-06 INTERIOR PAINTING SCHEDULE

- A. Ferrous Metal — Doors, Frames, and Miscellaneous Metals
1. Semi-Gloss Finish
 - a. Primer: Pro Industrial™ Pro-Cryl® Universal Primer, B66-310 Series
 - b. 1st coat: Pro Industrial™ Acrylic Semi-Gloss, B66-650 Series
 - c. 2nd coat: Pro Industrial™ Acrylic Semi-Gloss, B66-650 Series
 2. Alternate:
 - a. Primer: Pro Industrial™ Pro-Cryl® Universal Primer, B66-310 Series
 - b. 1st coat: Pro Industrial™ Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series
 - c. 2nd coat: Pro Industrial™ Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series
- B. Wood — Stained Trim or Chair Rails (to match existing)
1. Stained Finish
 - a. Stain: Minwax® 250 Stain
 - b. 2nd coat: Minwax® Waterbased Polyurethane Varnish, Satin or Gloss
 - c. 3rd coat: Minwax® Waterbased Polyurethane Varnish, Satin or Gloss
- C. Non-Ferrous Metal — Galvanized/Aluminum
1. Eg-Shel or Gloss Finish
 - a. Primer: Pro Industrial™ Pro-Cryl® Universal Primer, B66-310 Series
 - b. 1st coat: Pro Industrial™ Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series or Gloss, B73-300 Series
 - c. 2nd coat: Pro Industrial™ Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series or Gloss, B73-300 Series
- D. Gypsum Board — Walls
1. Eg-Shel- High Performance Finish
 - a. Primer: ProMar® 200 Zero VOC Latex Primer, B28W2600

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- b. 1st coat: Pro Industrial™ Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series
- c. 2nd coat: Pro Industrial™ Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series

E. Gypsum Board — Ceilings and Soffits

- 1. Flat Finish
 - a. Primer: ProMar® 200 Zero VOC Latex Primer, B28W2600
 - b. 1st coat: ProMar® 200 Zero VOC Interior Latex Flat, B30-2600 Series
 - c. 2nd coat: ProMar® 200 Zero VOC Interior Latex Flat, B30-2600 Series

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

SECTION 102800
TOILET AND BATH ACCESSORIES

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 SUMMARY

- A. This Section includes the following:
 - 1. Washroom accessories.
 - 2. Installation of salvaged accessories.

1-03 SUBMITTALS

- A. Submit in accordance with Section 01 33 00, SUBMITTALS.
- B. Product Data: Submit manufacturer's data sheets for each product specified, including the following:
 - 1. Installations instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Cleaning and maintenance instructions.
 - 4. Replacement parts information.
 - 5. Warranty.

1-04 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For toilet and bath accessories to include in maintenance manuals.

1-05 QUALITY ASSURANCE

- A. Source Limitations: For products listed together in the same articles in Part 2, provide products of same manufacturer unless otherwise approved by Designer.
- B. Accessibility: Comply with applicable provisions in the 2010 ADA Standards, and the 521 CMR Massachusetts Architectural Access Board (AAB).
- C. Ligature resistant

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1-06 COORDINATION

- A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.
- B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1-07 RELATED SECTIONS

- A. Section 09 30 010, TILING.

PART 2 - PRODUCTS

2-01 MATERIALS

- A. Stainless Steel: ASTM A 666, Type 304, 0.0312-inch minimum nominal thickness, unless otherwise indicated.
- B. Steel Sheet: ASTM A 1008/A 1008M, Designation CS (cold rolled, commercial steel), 0.0359-inch minimum nominal thickness.
- C. Fasteners: Screws, bolts, and other devices of same material as accessory unit and tamper-and-theft resistant where exposed, and of galvanized steel where concealed.

2-02 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide products indicated by:
 - 1. Kingsway Group, Inc.,
 - 2. BestCare by Whitehall Manufacturing,
 - 3. Secur-Care, or
 - 4. Approved equal.
- B. Grab Bar:
 - 1. Basis-of-Design Product: Anti ligature Kingsway KG270 (18”), KG279 (42”), KG278 (48”).

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- C. Shower Seat:
 - 1. Basis-of-Design Product: Kingsway KG28-GA molded shower seat.
- D. Ligature Resistant and ADA Compliant Wall Mounted Shower Head and Mixing Valve.
 - 1. Basis of design product: Secur-Care Model LR1741ADA.
 - a. Stainless steel finish.
- E. Ligature Resistant Linear Floor Drain.
 - 1. Basis-of-Design Product: Whitehall WHLD-12-F.
- F. Anti-Ligature Dual Coat Hook Rack.
 - 1. Basis-of-Design Product: Kingsway KG177 GR
- G. All Others – See Drawings for Accessories Schedule

PART 3 - EXECUTION

3-01 INSTALLATION

- A. Install products in strict compliance with manufacturer's written instructions and recommendations, including the following:
 - 1. Verify blocking has been installed properly.
 - 2. Verify location does not interfere with door swings or use of fixtures.
 - 3. Comply with manufacturer's recommendations for backing and proper support.
 - 4. Use fasteners and anchors suitable for substrate and project conditions.
 - 5. Install units rigid, straight, plumb, and level, in accordance with manufacturer's installation instructions and approved shop drawings.
 - 6. Conceal evidence of drilling, cutting, and fitting to room finish.
 - 7. Test for proper operation.

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3-02 ADJUSTING AND CLEANING

- A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.
- B. Remove temporary labels and protective coatings.
- C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

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

SECTION 220001
PLUMBING
(Filed Sub-Bid Required)

PART 1 - GENERAL

1.0 FILED SUB-BIDS

- A. The Work of this Section is stipulated as a filed Sub-Bid under Paragraph D, Item 2 of the Form for General Bid.
- B. All Sub-bids shall be submitted on the Form for Sub-Bid, included as Attachment C of PART I - INSTRUCTIONS TO BIDDERS, in accordance with requirements of Section 44F of Chapter 149 of the General Laws, as amended.
- C. The attention of Bidders is directed to Part I - Instructions to Bidders. Sub-Bids shall be filed with the Awarding Authority, via COMMBUYS, in accordance with requirements stipulated therein. The time and place for submission of Sub-bids are set forth under the Advertisement. Procedures and requirements for submitting Sub-bids are set forth in the Instructions to Bidders.
- D. 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.
- E. Work to be done under this SECTION is shown on Contract Drawings numbered P-1 & P-2.
- F. Remaining Contract Drawings are included for reference and coordination; Each Sub-bid filed with the Awarding Authority must be accompanied by BID BOND, CASH, or CERTIFIED CHECK, or a TREASURER'S CHECK or CASHIER'S CHECK, issued by a responsible bank or trust company, payable to the Department of Mental Health in the amount stipulated in the INSTRUCTIONS TO BIDDERS. A Sub-bid accompanied by any other form of bid deposit than those specified will be rejected.
- G. Each Sub-bid submitted for the work, under this SECTION, shall be on a form furnished by the Awarding Authority, as required by SECTION 44F of Chapter 149 of the General Laws, as amended.

1.1 GENERAL REQUIREMENTS

- A. Include General Conditions and applicable parts of Division 1 as part of this Section.

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- B. Examine all other Sections of the Specifications for any Requirements that affect Work of this Section, whether or not such Work is specifically mentioned in this Section.
- C. Coordinate Work with that of all other Trades affecting, or affected by, Work of this Section. Cooperate with such Trades to assure the steady progress of all Work under the Contract.

1.2 SCOPE OF WORK

- A. Work in this Section includes all labor, materials, equipment and services necessary to furnish completely and install all Plumbing Systems as specified herein, and in general as follows:
 - 1. Disconnect, make safe, cut and cap, and demolish existing equipment, piping and appurtenances as may be required to accommodate the new work. This Contractor shall be responsible for removal and disposal of all debris generated by the demolition of the plumbing systems.
 - 2. Interior Sanitary (soil, waste, and vent) drainage System.
 - 3. Hot and cold-water distribution System, including, piping, valves, insulation and associated accessories.
 - 4. Plumbing fixtures, floor drains and associated trim.
 - 5. Operating devices, controls, and associated wiring.
 - 6. Piping Systems identification
 - 7. Testing and sterilization.
 - 8. Operating instructions, maintenance manuals, and Record Drawings.
 - 9. Obtain and pay for all inspections, licenses, permits, and approvals required by Governing Authorities and install all work in compliance thereof.
- B. The Work of this section is shown on Drawings P-1 and P-2.
- C. Examine all Project Documents for any Requirements that affect the Work of this Section, whether or not such Work is specifically mentioned in this Section.
- D. This Contractor shall ensure that water and sanitary drainage are restored at the end of each day. In the event that this Contractor is unable to complete the work, this Contractor shall provide temporary services until such time as the new

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installation is in operation and tested by the Contractor.

1.3 RELATED WORK UNDER OTHER SECTIONS

- A. The following Work is not included in this Section but is to be performed by other Trades as specified within the other Sections.
 - 1. Cutting and patching.
 - 2. Firestopping.
 - 3. Electrical.
 - 4. Excavation and backfill. (This Contractor shall be responsible for sand and bedding of underground pipes)

1.4 INTENT

- A. All Work shall be in accordance with the arrangement, details, and locations, as indicated on the Contract Drawings, Reference Drawings and any supplemental Addenda, Bulletins or Drawings issued by the Architect. Layouts are diagrammatic and final arrangement of equipment and piping shall suit field conditions. Install all necessary fittings and equipment offsets required to meet job conditions. Work installed in a manner contrary to that shown on the Drawings, or interfering with the Work of another Trade, shall be removed and reinstalled when so directed by the Architect. Discrepancies and questionable points shall be immediately reported to the Architect for clarification.

1.5 CODES, REGULATIONS, AND STANDARDS

- A. All Work shall be installed in compliance with the governing Codes, Regulations, and Ordinances. It shall be the responsibility of this Contractor to familiarize himself with all governing Codes, Regulations, and Ordinances and report any non-compliance of the Plans and Specifications to the Architect, prior to entering into a Contract. All above Requirements shall take precedence over the Plans and Specifications. These Requirements are minimum criteria and no reductions to the quality or capacity of the Systems that may be permitted by Code will be allowed without written permission of the Architect.
- B. All workmanship, methods, and materials shall meet the highest standards of the Trade and, in general, shall conform to the standards of the following associations:

- American Standards Association (ASA)
 - American Society of Mechanical Engineers (ASME)
 - National Board of Fire Underwriters (NBFU)
 - Standard of Underwriters Laboratories (UL)

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American Society of Testing Materials (ASTM)
National Electric Code - NFPA 70 (NEC)
National Fire Protection Association (NFPA)
Occupational Safety and Health Act (OSHA)
American National Standards Institute (ANSI)
Building Officials and Code Administrators (BOCA)
American Society of Sanitary Engineering (ASSE)
American Society of Plumbing Engineers (ASPE)
Massachusetts State Building Code (780CMR)
Massachusetts State Plumbing and Gas Codes (248CMR)
Taunton Building Regulations and Ordinances

- C. Where the contract documents indicate more stringent requirements than the above codes and ordinances, the Contract Documents shall take precedence.

1.6 DRAWINGS AND CONFLICTS IN THE WORK

- A. The Drawings and Specifications are intended to be complementary. Any materials shown or specified in one, but not in the other, reasonably implied and usually included under good industry practice and/or required by applicable Codes and Regulations for the proper and safe completion and operation of the Work described herein, shall be furnished and installed by this Contractor at no additional cost to the Owner.
- B. In the case of an inconsistency between Drawings and the Specifications, or within either document which is not clarified by addendum, the product(s) of greater quality and/or greater quantity of work shall be provided in accordance with the Designer's interpretation.
- C. In the case of an inconsistency between the Drawings and Specifications, the Designer shall determine the intent, and the Designer's interpretation shall be final and shall be provided by this Contractor at no additional cost to the Owner.
- D. Drawings show general location and arrangement of equipment and piping, and are not intended to indicate the exact installation dimensions.
- E. Any conflicts and/or non-compliance of the Drawings and Specifications apparent at the time of the start of the project shall be brought to the attention of the Architect and/or Engineer prior to entering into a contract.

1.7 EXCHANGE OF INFORMATION AND COORDINATION

- A. All Work covered by this Section of the Specifications shall not be installed without first coordinating the installation of same with all other Trades and the General Contractor. This Contractor shall, at his own expense, relocate any of his Work should it interfere with the proper installation and/or operation of the Work

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to be installed by other Trades and by the General Contractor.

- B. Particular attention shall be directed to the coordination of this Work with all Work of other Trades which is to be installed in the ceiling areas. Coordinate, with all other Trades, the Work in suspended ceiling areas to insure adequate space for the installation of all Work of all Trades, prior to installation.
- C. Coordination of this Work with all other Trades will require that this Contractor attend on- site coordination meetings and develop coordination Drawings so as to ensure that all Trades will be provided with adequate space to install their Work.
- D. Furnish to the General Contractor, and all other Contractors, all information relative to the Work of this Section that will affect them, sufficiently in advance, so that they may plan their Work and installation accordingly.
- E. In the case of failure on the part of this Contractor to provide proper information, as indicated above, sufficiently in advance, this Contractor will pay for all back-charges incurred by the General Contractor and other Contractors for the modification and/or relocation of any portion of their Work already performed in conjunction with this Contract due to this Contractor's delay or for having given incorrect information.
- F. Obtain from all other Trades all information relative to the Work covered by this Section of the Specifications, which this Contractor is to execute in conjunction with the installation of the Work of the other Trade(s).
- G. In the event that conflicts, if any, cannot be settled rapidly and amicably between the affected Trades, with the Work proceeding in a skillful and competent manner, the Architect shall decide which Work is to be relocated and his judgment shall be final and binding.

1.8 WORKMANSHIP

- A. The entire Work provided in this Specification shall be constructed and finished, in every respect, in a skillful, competent, and substantial manner. It is not intended that the Drawings shall show every component, pipe, and detail, but this Contractor shall furnish and install all such parts as may be necessary to complete the Work in accordance with governing Codes and Regulations, the best Trade practices, and to the satisfaction of the Architect, Engineer and the Owner, at no additional cost to the Owner.

1.9 SITE INVESTIGATION

- A. It shall be the responsibility of the Bidders to acquaint themselves with the available information, before submitting their Bid. Bidders should visit the site and acquaint themselves with the existing conditions and shall study all Architectural,

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Structural, Mechanical and Electrical Drawings, as well as the Specifications. The Bidders shall fully inform themselves of all local and state Code Requirements. Bidders must report any conflicts and/or non-compliance of the construction documents to the Architect for review prior to submitting their bid.

1.10 TAXES AND INSURANCE

- A. This Contractor shall include in his Bid, applicable federal, state and local taxes and the premiums of the insurance required by the General Conditions and Supplementary General Conditions of the Contract.

1.11 PERMITS AND INSPECTIONS

- A. This Contractor shall obtain and pay for all the permits required for this Section of the Work. He shall also obtain and pay for all the inspections and tests required. Defects discovered in Work, materials, and/or equipment shall be replaced at no cost to the Owner, and the inspection and test shall be repeated until no defects are discovered.
- B. Availability of Record Drawings shall be a prerequisite to scheduling an Engineer's rough or final inspection of this Work and said Drawings and Original Contract Documents will be used in checking completion of the Work. For rough inspections, the Contractor's red-line mark-up drawings will be sufficient.
- C. Non-availability of Record Drawings or inaccuracies therein may be grounds for cancellation or postponement of any scheduled Engineer's inspection of the Work until such time as the availability or discrepancy has been corrected.
- D. No work shall be covered or concealed until it has been inspected and approved by the Engineer.
- E. Work which has been covered or concealed prior to the Engineer's inspection shall be uncovered or exposed, and then recovered or reconcealed, only after the Engineer's review and approval, the cost of which shall be borne by the General Contractor.

1.12 CONTRACT COST BREAKDOWN

- A. At the start of construction, submit a breakdown of material and labor costs to aid the Architect in determining the value of the Work installed, as the job progresses. The cost breakdown shall itemize categories of materials or portions of Systems, as may be the case, to place a value on the Work as it is installed.
- B. No requisitions will be paid until after the breakdown is approved by the Architect.

1.13 GUARANTEE

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- A. Unless otherwise noted, all materials, items of equipment and workmanship furnished under this Section shall carry the standard warranty against all defects in material and workmanship for a period of not less than one (1) year from the date of final acceptance of the Work. Any fault due to defective or improper material or workmanship which may develop within that period, shall be made good, forthwith, by and at the expense of this Contractor, including all other damage done to areas, materials and other Systems resulting from this failure.
- B. This Contractor shall guarantee that all elements of the Systems are of sufficient capacity to meet the specified performance Requirements as set forth herein or as indicated.
- C. Upon receipt of notice from the Owner of failure of any part of the Systems during the guarantee period, the affected part or parts shall be promptly replaced by this Contractor, at no charge to the Owner.
- D. Before the final payment is made, this Contractor shall furnish a written guarantee covering the above Requirements.

1.14 MATERIALS

- A. Materials shall be the best of their respective kinds and in full accord with the most modern mechanical construction. All materials shall be new and approved for use in Massachusetts.
- B. All materials necessary to make the installation complete in every detail shall be furnished and installed under this Contract, whether or not specifically shown on the Drawings or specified herein.
- C. It is the intent of the Specifications that one manufacturer be selected, not a combination, for any particular classification of materials.
- D. Where materials, equipment apparatus, or other products are specified by manufacturer, brand name, type or catalog number, such designation is to establish the standard of desired quality and style and shall be the basis of the Bid.

1.15 MATERIALS AND EQUIPMENT HANDLING

- A. This Contractor shall do all handling of his materials and equipment and the resulting cleanup, at his expense, in a safe and a satisfactory manner. Special attention shall be paid to the protection of life and property and the equipment or apparatus handled, and any corresponding damages shall be replaced, repaired, or paid for by this Contractor. This Contractor shall provide all rigging, hoisting, and staging required to complete the Work of this Section, unless specifically noted otherwise.

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- B. Provide, maintain, and remove safe and adequate interior and exterior staging, scaffolding, hoists, and all other related equipment necessary for proper and complete execution of the Work of this Section in accordance with the requirements of the Contract Documents.
- C. Staging, scaffolding, hoists, and all other related equipment shall comply with all applicable Federal, State, and Local regulations and codes.
- D. Staging, scaffolding, hoists, and all other related equipment shall be maintained to complete the Work, and removed when no longer required.

1.16 MAINTENANCE AND PROTECTION OF MATERIALS

- A. This Contractor shall be responsible for the maintenance and protection, from loss or damage of all causes, of all equipment, materials, and tools supplied by him and stored or installed on the job site, until final acceptance of the Project by the Owner.
- B. This Contractor shall store his materials and equipment in the location designated by the Owner or Architect and maintain the storage area in a clean and safe condition.
- C. This Contractor, at his own expense, shall clean, patch and repair any material and finishes of the building or its contents damaged during the execution of this Contract. Patches and repairs shall be performed by Trades specializing in the specific surfaces affected.

1.17 SUBMITTALS

- A. Submit one complete package of Manufacturer's data sheets for all products, materials, equipment, and accessories intended to be used in the construction of the Systems in accordance with this Section and the provisions of Section 013300, Submittals.
 - 1. Shop Drawings and Material Data Sheets shall be submitted in one complete package. Incomplete or partial submittals will not be accepted or reviewed.
 - 2. Multiple separate submittals submitted electronically through a construction software program (i.e. ProCore) will not be accepted. The operator of the software program shall receive, organize, and compile all cover sheets and manufacturer's data sheets into one complete package for submittal to the Engineer.
 - 3. Material Data Sheets shall be organized in a sequence identical to these specifications.

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4. Shop Drawings and Material Data Sheets shall be marked to indicate all specific sizes, capacities, materials, gauges, thicknesses, coatings, finishes, colors, models, optional equipment, and accessories. Shop Drawings and Material Data Sheets not marked as such may not be accepted or reviewed.
 5. Material Data Sheets shall be specific to the manufacturer and product being submitted. Brochures or sales sheets will not be accepted or reviewed.
 6. All Shop Drawings and Material Data Sheets shall be reviewed by the General Contractor for correctness, completeness, and compliance with the Contract Documents, and shall be stamped as such by the General Contractor prior to submission to the Architect or Engineer for review.
 7. Review of incorrect, incomplete, or rejected submittals which require resubmission shall be paid for by this Contractor.
 8. Shop Drawings and Material Data Sheets shall be submitted with sufficient time for the General Contractor, Architect, and Engineer to review. Be advised that MGL Chapter 30, Section 39P allows the Engineer the right to a 30-day review period. This applies to all submittals, whether the original submission or any subsequent revisions and resubmittal(s) thereto.
 9. All products, materials, equipment, and accessories must be approved prior to installation.
 10. Delays in the Work caused by incorrect, incomplete, rejected, or delays in submitting Shop Drawings and/or Material Data Sheets shall be borne by this Contractor.
- B. The approval of products, materials, equipment, or accessories does not relieve this Contractor from the responsibility of Submittal errors in details, sizes, colors, quantities, and dimensions which deviate from the Specifications, Contract Drawings, and/or job conditions, as they exist.
- C. If products, materials, equipment, or accessories are substituted by this Contractor for those specified and such substitution necessitates changes in any mechanical or electrical equipment, or alteration to connections, piping supports, or construction, same shall be provided by this Contractor at no additional cost to the Owner.
- D. The Architect's permission to make substitutions shall not relieve this Contractor from full responsibility for the Work.
- E. Changes to Work already performed, made necessary by delays in submittal approval, are the responsibility of this Contractor.
- F. No work shall be allowed to take place on the premises until all submittals have been received, reviewed, and approved by the Engineer.

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1.18 OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS

- A. Provide operating instructions to the Owner's designated representative, with respect to operating and maintenance procedures, for all equipment and Systems installed under this Section. Operating instructions shall be given by the manufacturers' representatives. The cost of such instruction, up to a full four (4) hours, shall be included in the Contract price.
- B. At the completion of the Project, turn over to the Architect two (2) complete Maintenance Manuals containing the following, in order, as applicable:
 - 1. Contractor letter of guarantee.
 - 2. Copy of fully executed permit(s).
 - 3. Hard copy of approved As-Built Drawings.
 - 4. DVD of approved As-Built Drawings in PDF and AutoCad format.
 - 5. Complete approved submittals of all materials and equipment installed.
 - 6. Names, addresses and telephone numbers of all suppliers of the materials and equipment.
 - 7. Warranties on all equipment.
 - 8. Preventative maintenance instructions for all Systems.
 - 9. Spare parts list of all equipment and System components.
 - 10. Spare parts kits as may be required by governing Codes, Regulations, and Ordinances. (i.e backflow preventer per 310CMR Section 22.22(4)(c)).
 - 11. Disinfection and backflow preventer test results.
 - 12. Other documentation of permits, inspections, tests, etc. as applicable.
- C. Each manual shall be typewritten and bound under a separate hardcover 3-ring binder and will be reviewed by the Architect. The manuals shall be clearly and permanently identified on the cover and binding with the name of the Project.
- D. Availability of Record Drawings shall be a prerequisite to scheduling the Engineer's final inspection of this Work.
- E. Refer to Section 017700, Project Closeout, for general provisions covering Project

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closeout procedures.

1.19 CLEANING SYSTEMS

- A. Before the Systems are accepted, all piping and equipment shall be thoroughly cleaned to remove all grease, oil, flux, dust, dirt and/or other foreign matter.
- B. After the installation is complete, equipment with factory-finished surfaces shall be cleaned and damaged or scratched spots shall be touched up with the same type and color paint applied at the factory.
- C. All piping and equipment that is to receive finish paint by the Painting Contractor shall be cleaned by this Contractor and left ready to have surfaces prepared to receive paint.
- D. All piping that is to receive paint shall not have any identifying labels, tags, markings, etc. (except for UL, FM, and code required nameplates) which would interfere with the preparation and painting of the surfaces.

1.20 RUBBISH REMOVAL

- A. At the completion of the Work, or when ordered by the General Contractor or the Architect, this Contractor shall remove from the property, all the rubbish and waste materials belonging to him. Keep the job site free from the accumulation of waste materials and rubbish; premises must be maintained in a clean condition.

1.21 TEMPORARY STRUCTURES

- A. This Contractor shall provide, on the premises and where directed by the Architect, shall maintain in good condition, and shall remove when directed, suitable and substantial watertight sheds in which he shall store all his materials and equipment.

1.22 TEMPORARY SERVICES

- A. All water, electricity, fire protection and sanitary facilities required for safe and efficient construction during normal working hours shall be furnished in accordance with the General Requirements and Supplementary General Requirements.

1.23 TESTS

- A. Furnish all labor, materials, instruments, supplies, and services and bear all cost for the accomplishment of the tests herein specified or required by governing Authorities. Correct all defects appearing under test, repeat the tests until no defects are disclosed, and leave the equipment clean and ready for use.

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- B. Perform any tests, other than herein specified, which may be specified by legal authorities or by agencies to whose Requirements this Work is to conform.
- C. Dispose of test water and wastes after tests are complete, in a manner satisfactory to the Architect and in accordance with governing Regulations.
- D. This Contractor shall coordinate and facilitate all inspections and tests required by Codes or the Authorities Having Jurisdiction.

1.24 EQUIPMENT ACCESS REQUIREMENTS

- A. All Work shall be installed so that all equipment may be replaced without the removal of piping, accessories, or other equipment.
- B. All Work shall be installed so that all parts requiring inspection, operation, maintenance and repair are readily accessible.
- C. Minor deviations from the Drawings may be made to accomplish this, but changes of magnitude shall not be made prior to written approval from the Architect.
- D. Furnish access panels as required to permit access for adjustment, removal and the replacement and servicing of all equipment, and all other items requiring maintenance and/or adjustment.
- E. Access panels shall be installed by the General Contractor.
- F. Coordinate the exact location of access panels in all finished spaces with the Architect.

1.25 INSTALLATION REQUIREMENTS

- A. This Contractor shall comply with all the governing Codes, Regulations, and Ordinances of all legally constituted Authorities having jurisdiction over the whole or any part of the Work herein specified. Governing Codes and Regulations supplement this Specification and shall take precedence in any case of conflict.
- B. All equipment and materials furnished in connection with the installation shall be new and shall be furnished and installed in accordance with these Specifications and the Manufacturer's requirements.
- C. All piping shall be installed concentrically within any floor, ceiling or wall penetration so as to allow for proper sealing of the penetration while maintaining the sealant flush with the adjoining surfaces.

1.26 ELECTRICAL POWER AND CONTROL WIRING

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- A. This Contractor shall provide to the General Contractor wiring diagrams for all equipment furnished under this Section for which electrical power wiring is to be installed by the Electrical Contractor.
- B. This Contractor is responsible for furnishing and installing all operating and control devices and associated control wiring as may be required to provide fully functional and operational systems.

PART 2 - PRODUCTS

2.0 PRODUCT APPROVAL

- A. All piping, fittings, materials, equipment and appurtenances to be installed under this Section of the Work shall be approved for use in Massachusetts in accordance with 248CMR.
- B. Where materials, equipment, apparatus, or other products are specified by manufacturer, brand name, type or catalog number, such designation is to establish the standard of desired quality and style and shall not be construed as fulfilling the requirements of 248CMR.
- C. It shall be the responsibility of this Contractor to ensure that all items submitted to the Engineer to be installed in association with this Work comply with all requirements of 248CMR.
- D. Approval by the Engineer of items submitted does not relieve this Contractor from the responsibility of complying with the requirements of 248CMR.
- E. Installed items which do not meet the requirements of 248CMR shall be removed and replaced with approved products by this Contractor at no additional cost.

2.01 PIPE AND FITTINGS

- A. Storm, Soil, Waste, and Vent Piping
 - 1. Piping materials for storm and/or sanitary piping systems inside the building above the floor slab including soil, waste, and vent piping, unless otherwise noted, shall be standard weight, coated, hubless cast iron pipe and fittings manufactured in accordance with ASTM A-888 and the Cast Iron Soil Pipe Institute's Standard No. 301. The pipe shall be cast in one piece and shall be legibly marked on the barrel with the manufacturer's name and/or trademark. Couplings shall be heavy duty neoprene gasket with stainless steel clamp, screw and shield, manufactured in accordance with ASTM C-1540.
 - 2. Piping materials for storm and/or sanitary piping systems below the floor slab

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and/or outside the building including soil, waste and vent piping, unless otherwise noted, shall be service weight cast iron pipe and fittings with hub and spigot joints, coated with tar or asphaltum, manufactured in accordance with ASTM A-74. The pipe shall be cast in one piece and shall be legibly marked on the barrel with the manufacturer's name and/or trademark. Gaskets shall be one-piece compression gasket made of neoprene in accordance with ASTM C-564.

3. Waste and vent pipe above ground, except for urinals, two inches (2") and smaller, may be Type "DWV" copper tubing with solder joint sweat drainage fittings, Schedule 40 galvanized steel or wrought iron pipe.

B. Domestic Water Piping

1. All domestic water piping inside the building, except as hereinafter specified, shall be Type "L" hard-drawn copper tubing, with soldered joint cast brass or wrought copper fittings. Pipe, fittings, and solder shall be "lead free".
2. Cast copper alloy, wrought copper, and wrought copper alloy, press-connect pressure fittings for use with hard drawn seamless copper water tube shall be allowed. The press-connect system (tube, fitting and joint) shall conform to ASTM B16.51.
3. Piping for connections between valves and fixtures shall be chrome-plated seamless red brass pipe, iron pipe size, containing not less than 85% copper.

2.2 VALVES

A. General

1. Furnish and install valves, where indicated on Drawings or specified, so located that they may be operated, repaired or replaced with a minimum effort and repacked under pressure.
2. The basic system of valves (i.e., gate, ball, check for water service) shall be of one manufacturer.
3. Access panels shall be furnished by this Contractor for all valves concealed within non-removable ceilings or walls. Coordinate access panel type and location with Architect. Access panels shall be installed by the General Contractor.

B. Domestic Water System Valves

1. All valves shall be "lead free".

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2. Shut-off valves (ball) shall be furnished and installed on branch connections to mains, connections to each group of fixtures, fixtures fed separately from mains, connections to equipment, and where shown on the Drawings. All valves shall be brass and of 300 C.W.P. design.
3. All fixture supplies and supplies to equipment not already furnished as such shall have quarter-turn chrome plated brass angle or straight compression stops, with chrome plated brass riser tubes, unless otherwise specified. Flexible braided fixture supplies shall not be allowed.
4. Fixture supplies in publicly accessible areas shall have loose key handles.
5. Drain valves shall be installed to drain the water from all sections of the hot and cold piping. Where required, furnish and install ½" brass ball valves with hose connection and cap with chain on each drain.

2.3 PIPE HANGERS, SUPPORTS, AND CHANNELS

- A. All piping shall be rigidly supported from the building structure by means of approved hangers and supports. Pipes shall be supported so as to maintain the required grading and pitching of lines, to prevent vibration and to secure piping in place; they shall be arranged so as to provide for proper expansion and contraction of pipe.
- B. Where required, all piping and their attachments shall be designed for seismic forces as per the Requirements of the Massachusetts Building Code, Section 1612.7.4. It shall be the responsibility of this Contractor to provide all necessary calculations as required by the Building Code. One copy shall be submitted to the Engineer for his review, and one copy shall be submitted to the Structural Engineer for approval of attachments to the building structure. All Work of this Section shall be installed in accordance with the seismic Requirements of 780 CMR. It shall be the responsibility of this Contractor to coordinate the installation of his Work with said Requirements.
- C. Maximum spacing of hangers on horizontal runs of pipe shall be in accordance with the following:

1. Cast Iron:	< 10'-0" length	5'-0" o.c.
	≥ 10'-0" lengths	10'-0" o.c.
2. Copper:	1¼" and smaller	6'-0" o.c.
	1½" and larger	10'-0" o.c.
3. Steel:	1¼" and smaller	6'-0" o.c.
	1½" and larger	10'-0" o.c.

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- D. If Codes having jurisdiction or manufacturers' installation instructions require closer spacing, the hanger spacing shall be as required by Code in lieu of the foregoing. Provide hangers at all changes in direction and on both sides of concentrated loads (pumps, valves, strainers, regulators, etc.).
- E. All horizontal piping 2" and smaller shall be supported with adjustable band hangers. All piping 2½" and larger shall be supported by adjustable clevis hangers. Vertical piping shall be supported by extension type split ring hangers along the wall, and riser clamps where passing through floors. Hangers and clamps for uncovered (un-insulated) copper and brass piping shall be factory applied plastic coated steel or copper hangers. Hanger rods shall have machine threads.
- F. All hangers on insulated lines shall be sized to fit the outside diameter of the pipe insulation. Provide pipe covering protection saddles at all hangers on insulated lines of sheet metal 18 gauge and twelve inches (12"), minimum length, and shall cover 180 degrees of arc (lower quadrants) on the covering at all hangers on insulated piping systems.
- G. Unless noted otherwise, all hangers, rods, supports, channels, and accessories shall be galvanized.
- H. All piping installed under this Section of the Specifications shall be independently supported from the building structure and not from the ceiling, walls, piping, ductwork, or conduit of other Trades. All supplementary steel, including factory-fabricated channels required to meet the Requirements specified herein, shall be furnished and installed by this Contractor.
- I. All Work of this Section shall be installed in accordance with the seismic Requirements of 780 CMR. It shall be the responsibility of this Contractor to coordinate the installation of his Work with said Requirements.
- J. Underground piping:
 - 1. Where trenches are excavated to a grade such that the bottom of the trench forms the bed for the pipe:
 - a. care must be exercised to provide solid bearing between joints; and
 - b. bell holes shall be provided at points where the pipe is joined.
 - 2. Where trenches are excavated below grade such that the bottom of the trench does not form the bed for the pipe, the trench shall be back-filled to grade with sand tamped in place so as to provide a uniform bearing surface for the pipe between joints.
 - 3. Where rock is encountered in trenching:

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- a. The rock shall be removed to a point at least three inches below the grade line of the trench and the trench shall be backfilled to grade with sand tamped in place so as to provide a uniform bearing for the pipe between joints; and
 - b. care shall be exercised to ensure that no portion of the pipe, including its joints, rests on any portion of a rock.
4. If soft materials of poor bearing qualities are found at the bottom of the trench:
- a. concrete foundation shall be provided to ensure a firm foundation for the pipe; and
 - b. the concrete foundation shall be bedded with sand tamped in place so as to provide a uniform bearing for the pipe between joints.
5. Backfilling:
- a. Until the crown of the pipe is covered by at least two feet of tamped earth, considerable care shall be exercised in backfilling trenches.
 - b. Loose earth, free of rocks, broken concrete, frozen chunks, and other rubble, shall be carefully placed in the trench in six-inch layers and tamped in place.
 - c. Care shall be taken to thoroughly compact the backfill under and beside the pipe to be sure that the pipe is properly supported.
 - d. Backfill shall be brought up evenly on both sides of the pipe so that it retains proper alignment.

2.4 ACCESS PANELS

- A. Furnish access panels, for installation by the General Contractor, in walls and ceilings at locations indicated on Drawings or as required to permit access for adjustment, removal, and replacement of all equipment, such as valves, traps, vacuum breakers, and all other items requiring maintenance or adjustment.
- B. Where possible, all access panels shall be located in closets, storage rooms and/or other non-public areas, in a skillful and competent manner, positioned so that the junction can be easily reached. The size shall be sufficient for its intended purpose (minimum 16" x 16"). When access panels are required in corridors, lobbies, or other habitable areas, they shall be located as directed by the Architect.
- C. Access panels shall be of steel, prime painted, and furnished with one-piece

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flange, piano hinge, and cylindrical lock. Furnish with anchor straps when installing in masonry openings.

- D. Access panels located in Fire Rated walls and ceilings shall bear the U.L. Label ensuring fire-rated construction as applicable to the fire rating of the assembly.
- E. Access panels shall have 16-gauge steel frame with 14-gauge steel door with radiused corners equal to Karp model DSC-214M, Elmdor DW Series, Milcor model M, or approved equal.

2.5 PIPE SLEEVES

- A. All pipe sleeves shall be furnished and set by this Contractor. Their location and setting shall be carefully coordinated with the Requirements or limitations of the building assembly they are passing through. Any conflict arising shall be solved by utilizing the best Trade practices.
- B. Sleeves shall be provided at all locations where pipes penetrate or pass through building assemblies such as floors, walls, and/or ceilings.
- C. Sleeves shall have a minimum internal diameter which is one inch (1") larger than the outside diameter of the pipe passing through the sleeve.
- D. For insulated pipes, sleeves shall be sized to accommodate the pipe insulation.
- E. Where pipes pass through framed building assemblies of lath and plaster or gypsum board, furnish and install 24-gauge galvanized steel sleeves.
- F. Where pipes pass through building assemblies of masonry or concrete, sleeves shall be Schedule 40 black steel, in accordance with ASTM A53.
- G. Sleeve ends shall be flush with the surfaces, except in floors where it is possible for water to accumulate such as toilet rooms, janitor's closets, etc., in which case they shall terminate one inch (1") above the finished floor.
- H. The space between the sleeve and the building assembly shall be made tight using the same materials as the assembly penetrated.
- I. The space between pipes and sleeves shall be made tight using approved caulking materials.
- J. The space between pipes and sleeves penetrating exterior building assemblies of masonry or concrete shall be sealed with link-seal modular elastomer seals as manufactured by GPT or approved equal.
- K. Pipes penetrating fire-rated building assemblies shall be firestopped in accordance with the appropriate UL Through Penetration Firestop System for the penetrant

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and assembly being penetrated. Furnish UL data sheets for each proposed UL fire stop system and corresponding UL assembly to the Engineer for review.

- L. Furnish labor to set and fasten all sleeves before the building assemblies are finally constructed.
- M. Sleeves shall be installed in new and/or existing building assemblies as required for the installation of through penetration firestop systems.

2.6 INSULATION

- A. All new pipe and fittings shall be insulated with Owens/Corning Fiberglas SSL-II-ASJ molded glass fiber insulation, or approved equal. Glass fiber insulation shall have a minimum density of 3¼ pounds per cubic foot with a thermal conductivity ("K" value) ranging from 0.21 to 0.28 at 100°F mean temperature. Insulation shall have a flame spread rating of 25 or less, a smoke developed rating of 50 or less, and a factory applied all service vapor barrier jacket. Insulation shall be compliant with the IECC 2015.

- B. The thickness of insulation to be applied to piping shall be as follows:

1. Cold Water:	All pipe sizes	½"
2. Hot Water:	1¼" and smaller	1"
	1½" and larger	1½"
3. Recirculated Hot Water:	1¼" and smaller	1"
	1½" and larger	1½"

- C. Insulate all fittings, flanges, valves, etc., for the services requiring insulation, same as specified for their respective piping, with white PVC fitting covers as manufactured by Zeston or approved equal, installed in accordance with the manufacturer's instructions.
- D. All longitudinal joints and joints between adjacent sections of insulation shall be butt tightly together, lapping joints with butt strip seals and vapor barrier cement.
- F. Plain ends shall be sealed with vapor barrier cement.

2.7 CLEANOUTS

- A. Clean-outs shall be installed where indicated on the Drawings and/or where required in soil, and waste pipes. Clean-outs shall be installed at the base of all risers and at each change of direction.
- B. Clean-out plugs shall be heavy cast brass of the screwed type, full size up to and including four inches (4").

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- C. Clean-outs shall be same material and size as piping up to four inches (4") in size and not less than four inches (4") for piping larger than four inches (4").
- D. Clean-outs shall be brought up flush with the finished floor level.
- E. Access cover type shall be equal to J.R. Smith 4020 series round bronze top for concrete and carpeted floors, or J.R. Smith 4040 series square bronze top for tiled floors. Furnish with carpet clamping flange, tile recess or terrazzo recess as applicable. Coordinate with architectural finishes.
- F. All floor clean-out access covers shall be manufactured by J.R. Smith, Zurn, or Josam.
- G. Access to clean-outs in walls and/or ceilings shall be provided by an access panel.

2.8 SHOCK ABSORBERS

- A. Furnish and install a shock absorber on the cold-water feed to each quick-acting valve installed on the domestic water system including, but not limited to, water closet and urinal flush valves, clothes washers, and dishwashers, in accordance with the Plumbing and Drainage Institute "Standard P.D.I. WH201". Shock absorbers shall be equal to Hydra- Rester 650 Series as manufactured by Sioux Chief.
- B. All shock absorbers shall be located behind access panels or in readily accessible areas.
- C. The size and installation of shock absorbers shall conform to manufacturer's recommendations.

2.9 MIXING VALVES

- A. Furnish and install a mixing valve at each shower and/or public lavatory to limit the outlet temperature to a maximum of 110°F. Mixing valves shall be installed in accordance with ASSE Standards 1016, 1017, 1069, 1070, and/or 1071 as applicable. Mixing valves shall be combination thermostatic and pressure balancing type.
- B. All mixing valves shall be located behind access panels or in readily accessible areas.
- C. The size and installation of mixing valves shall conform to the manufacturer's recommendations.

2.10 PLUMBING FIXTURES

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- A. Furnish and install all fixtures including incidental connections and/or fittings as may be necessary to make a complete, functional, and code compliant installation.
- B. All fixtures shall be ligature resistant.
- C. Fixtures shall be installed in conformance with the manufacturer's instructions, architect's plans and elevations, and as required by governing Codes and Regulations.
- D. Fixtures shall be as scheduled on the Drawings.

2.11 ESCUTCHEONS

- A. Install escutcheons around exposed pipe passing through finished floors, walls or ceilings. Escutcheons shall be on piece heavy cast brass, chromium plated, with adjustable set screw and shall be of sufficient outside diameter to cover sleeve opening and shall fit snugly around pipe.

2.12 THERMOMETERS

- A. Thermometers shall be as manufactured by Meuller, Taylor, Foxboro, or approved equal.
- B. All thermometers shall have a 9" scale, black scale divisions on white face, perma-colored liquid, union hub, separable brass well, and adjustable base.
- C. Thermometers shall have a temperature range of 30°F to 240°F, and shall have 2°F scale divisions.
- D. Thermometers shall be installed on the inlet and outlet of each piece of water heating equipment and mixing valves.
- E. All thermometers shall be installed so as to be easily read from the floor.

PART 3 - EXECUTION

3.1 OPERATION AND START-UP

- A. Furnish all labor, equipment, materials, and test necessary to place all equipment and Systems into operation, and obtain approval of the entire Plumbing System from the local building department.
- B. Materials, fixtures and fittings shall be properly protected and all pipe openings shall be temporarily closed so as to prevent obstructions and damage.

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- C. Prior to final inspection, clean all fixtures and flush all piping and equipment and then place all equipment and fixtures into working order to demonstrate the fitness of the installation.

3.2 CLEANING AND FLUSHING

- A. The potable water system shall be flushed and disinfected as per 248 CMR, 10.14 (13).
- B. This contractor shall obtain the services of an independent testing agency to test the potable water system after disinfection in accordance with the EPA's (Environmental Protection Agency) Primary Drinking Water Standards for Human Consumption. Test results shall be submitted prior to his request for a final inspection.
- C. The disinfection and testing shall be repeated, at no cost to the Owner, until no defects are discovered.

3.3 COORDINATION

- A. The structure and its appurtenances, clearances and the related services, such as plumbing, heating, ventilation, and electric service, have been planned to be adequate and suitable for the installation of equipment specified under this Section. The Owner will not assume any increase in cost caused by differing Requirements peculiar to a particular make or type of equipment, and any such incidental cost shall be borne by this Contractor.
- B. This Contractor shall be responsible for Work and equipment furnished and installed by him or his Subcontractor(s) until the completion and final acceptance of this Contract, and he shall replace any Work that may be damaged, lost, or stolen, without additional cost to the Owner.
- C. Cutting and Patching - It shall be the duty of this Contractor to consult with and give to the General Contractor, the exact location and size of all openings and full information as to cutting and patching necessary for the same.
- D. In the event this Contractor fails to provide sleeves, inserts, and templates or fails to notify other Contractors well in advance of his Requirement, he shall be responsible for paying for all cutting and patching made necessary by his failure to do so.
- E. The location and method of attaching supports for plumbing equipment to the building structure shall be coordinated with the Architect and General Contractor prior to the installation of any equipment. This Contractor shall take necessary precautions to ensure the building structure and components are not overstressed by the support of plumbing equipment.

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- F. In the event there is a conflict or inadequate space for the proper installation of plumbing Systems, this Contractor shall prepare a scaled ($\frac{1}{4}'' = 1'-0''$ min.) composite sketch, showing the building structure and all equipment and items affecting the installation, to clearly identify the areas of conflict. This Contractor shall submit four (4) copies of the sketch, along with a written explanation of the problem and his proposed solution, to the Engineer for his review and determination on what action to take to resolve the conflict.
- G. It shall be the duty of this Contractor to furnish full information to all Trades relative to the Work they are to do in connection with Work under this Section. This includes data for wiring, including wiring diagrams, equipment foundations, pipe connections, etc., furnished under other Sections.

3.4 AS-BUILT DRAWINGS

- A. The Contractor shall reserve one set of Drawings for record purposes. From this set, the Contractor shall detach and furnish, at no charge to the Subcontractors, the Drawings of their portion of the Work for the same purpose.
- B. The Contractor and the above Subcontractors shall keep their marked up As Built set on the site at all times and note on it in colored ink or pencil, neatly and accurately, at the end of each working day, the exact location of their Work as actually installed.
 - 1. The location of all underground utilities and appurtenances, shall be referenced to permanent surface features, both horizontally and vertically at ten (10) foot intervals and at all changes of direction.
 - 2. The location of all internal utilities, equipment, and appurtenances, including but not limited to piping, valves, cleanouts, strainers, traps, and maintenance devices:
 - a. shall be shown by offsets to structure and drawing grid lines.
 - b. The tolerance for the actual location of these items on the marked up As Built Drawings shall be plus or minus two (2) inches.
- C. Use colored pencils for the following:
 - 1. Red indicates deleted items.
 - 2. Green reflects changes, additions, or new equipment.
 - 3. Blue indicates specific info or details are provided.

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- D. Explain changes if necessary and use clear lettering. Notes and corrections are recommended. Use the same symbols, legend, and abbreviations as the original drawings.
- E. Add Contractor's name, date and clearly identify Drawings as "Red-Lined Drawings for As- Built preparation purposes only.
- F. If no changes are needed to a specific drawing, state so and mark them as "As-Built".
- G. The As-Built Drawings shall be maintained in a clean, dry, and legible condition.
- H. The As-Built Drawings shall be reviewed in the field by the Engineer during the construction process and prior to the related work being concealed. Concealment includes Work located above suspended acoustical tile ceilings. Ceiling tiles shall not be installed until the As-Built Drawings have been reviewed and approved by the Engineer.
- I. Work which has been covered prior to the Engineer's review of the associated As-Built Drawings shall be exposed, and then concealed, only after the Engineer's review and approval, the cost of which shall be borne by the General Contractor.
- J. The Engineer has a limited number of inspections in its Contract. The General Contractor and this Contractor should be aware of the quantity and possible frequency of these inspections and coordinate their Work accordingly. Additional inspections may be provided, the cost of which shall be borne by the General Contractor.
- K. Availability of As-Built Drawings shall be a prerequisite to scheduling an Engineer's inspection of this Work and said As-Built Drawings and Original Contract Documents will be used in checking completion of the Work.
- L. Non-availability of As-Built Drawings or inaccuracies therein may be grounds for cancellation or postponement of any scheduled Engineer's inspection of the Work until such time as the availability or discrepancy has been corrected, and the General Contractor shall compensate the Engineer directly for their effort in association with the cancelled or postponed inspection.
- M. Non-availability of or inaccuracies in As-Built Drawings are not grounds for claims of delays in the Work.

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

SECTION 230001

HEATING, VENTILATING AND AIR CONDITIONING

(Filed Sub-Bid Required)

1.1 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. Time, Manner and Requirements for Submitting Sub-Bids:

1. Sub-bids for work under this Section shall be for the complete work and all SUB-BID documents must be uploaded into COMMBUYS at a time stipulated in the "NOTICE TO CONTRACTORS".

The following should appear on the upper left-hand corner of the envelope:

NAME OF SUB-BIDDER: (Insert name of sub-bidder)

MASS. STATE PROJECT: ((Insert project number from top of page))

SUB-BID FOR SECTION: 230001 – HEATING, VENTILATING
AND AIR CONDITIONING

2. Each sub-bid submitted for work under this Section shall be on forms furnished by the Department of Mental Health (DMH). Sub-bid forms can be found in PART I – INSTRUCTION TO BIDDERS of the Bid Package.
3. Sub-bids filed with the DMH shall be accompanied by BID BOND or CASH or CERTIFIED CHECK or TREASURER'S CHECK or CASHIER'S CHECK issued by a responsible bank or trust company payable to the Commonwealth of Massachusetts in the amount of five percent of the sub-bid. A sub-bid accompanied by any other form of bid deposit than those specified will be rejected.

- C. Reference Drawings: The Work of this Filed Sub-Bid is shown on the following Contract Drawings: M-1, M-2 & M-3

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:

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1. Hot and chilled water supply and return piping.
 2. New Fan Coil Units
 3. Flexible connections for vibrating and rotating equipment.
 4. Equipment bases and supports.
 5. Vibration isolators and inertia blocks.
 6. Sheet metal work.
 7. Condensate piping from DX coil drain pans.
 8. Pipe, duct, valve and equipment identification.
 9. Instruction manuals and startup instructions.
 10. Testing and balancing.
 11. Cleaning.
 12. Automatic temperature controls.
 13. Coordination drawings and record drawings and similar requirements.
 14. Hoisting equipment for the Work of this Section.
 15. Coordination with General Contractor for use of staging, planking and scaffolding, interior and exterior, which is the responsibility of the General Contractor as specified in Section 015000 - TEMPORARY FACILITIES AND CONTROLS.
- B. Alternates: Not Applicable.
- C. Items to Be Installed Only: Install the following items as furnished by the designated Sections:
1. Section 260001 – ELECTRICAL WORK
 - a. All electrical power wiring and connections and all disconnect switches not provided with or as integral part of the HVAC equipment shall be provided by the Electrical Subcontractor.
 - b. Refer to the Electrical specification for more information.
- D. Items to Be Furnished Only: Furnish the following items for installation by the designated Sections:
1. Section 260001 – ELECTRICAL WORK:
 - a. Refer to the Electrical specification for more information.
- E. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 260001 - ELECTRICAL WORK for electrical power to mechanical equipment as indicated on the Drawings.
- F. Perform work and provide material and equipment as shown on Drawings and as specified or indicated in this Section of the Specifications. Completely coordinate work of this Section with work of other trades and provide a complete and fully functional installation.
- G. Give notices, file plans, obtain permits and licenses, pay fees and back charges,

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and obtain necessary approvals from authorities that have jurisdiction as required to perform work in accordance with all legal requirements and with Specifications, Drawings, Addenda and Change Orders, all of which are part of Contract Documents.

1.3 SUBMITTALS

- A. Comply with requirements specified in Section 013300 – SUBMITTAL REQUIREMENTS.
- B. Shop Drawing: Submittals shall include but not be limited to:
 - 1. Fan coil unit.
 - 2. Automatic controls.
 - 3. Piping, Ductwork and Equipment Insulation.
 - 4. Vibration isolators.
 - 5. Pipe, pipe hangers, sleeves and inserts.
 - 6. Identification for pipe, duct, valves and equipment.
 - 7. Complete ductwork shop drawings, construction details and duct construction standards.
 - 8. Access panels.
 - 9. Color selection charts and samples for equipment and systems in finished areas.

1.4 DEFINITIONS

- A. As used in this Section, "provide" means "furnish and install" and "HVAC" means "Heating, Ventilating and Air Conditioning" and "POS" means "Provided Under Other Sections". "Furnish" means "to purchase and deliver to the project site complete with every necessary appurtenance and support," and "Install" means "to unload at the delivery point at the site and perform every operation necessary to establish secure mounting and correct operation at the proper location in the project."
- B. "Furnish" or "Supply" means to purchase, procure, acquire and deliver.
- C. "Install" means to rig, erect, mount and connect, unless specifically noted otherwise.
- D. "Furnish and Install" means to supply, deliver, rig, erect, mount and connect in readiness for operation, unless specifically noted otherwise.
- E. "Provide" is synonymous with "Furnish and Install".
- F. "Piping" means pipe, tubing, fittings, flanges, unions, valves, strainers, traps, hangers and other accessories related to such piping.

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- G. "Concealed" means hidden in chases, furred spaces and walls, above ceilings or enclosed in construction.
- H. "Exposed" means visible or not installed "Concealed" as defined above.
- I. "Approved Equal" or "or equal" means any equipment or material which is approved by the Engineer as equal in quality, durability, appearance, strength, design and performance to the equipment or material originally specified.
- J. "Underground" means buried exterior to or within the building.

1.5 CONTRACT DOCUMENTS

- A. Listing of Drawings does not limit responsibility of determining full extent of work required by Contract Documents. Refer to Architectural, HVAC, Electrical, and other Drawings and other Sections that indicate types of construction in which work shall be installed and work of other trades with which work of this Section must be coordinated.
- B. Except where modified by a specific notation to the contrary, it shall be understood that the indication and/or description of any item, in the Drawings or specifications or both, carries with it the instruction to furnish and install the item, regardless of whether or not this instruction is explicitly stated as part of the indication or description.
- C. Items referred to in singular number in Contract Documents shall be provided in quantities necessary to complete work.
- D. Drawings are diagrammatic. They are not intended to be absolutely precise; they are not intended to specify or to show every offset, fitting, and component. The purpose of the Drawings is to indicate a systems concept, the main components of the systems, and the approximate geometrical relationships. Based on the systems concept, the main components, and the approximate geometrical relationships, the contractor shall provide all other components and materials necessary to make the systems fully complete and operational.
- E. Information and components shown on riser diagrams but not shown on plans, and vice versa, shall apply or be provided as if expressly required on both.
- F. Data that may be furnished electronically by the Designer (on computer tape, diskette, or otherwise) is diagrammatic. Such electronically furnished information is subject to the same limitation of precision as heretofore described. If furnished, such data is for convenience and generalized reference, and shall not substitute for Designer's sealed or stamped construction documents.

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1.6 DISCREPANCIES IN DOCUMENTS

- A. Where Drawings or Specifications conflict or are unclear, advise Designer in writing before Award of Contract. Otherwise, Designer's interpretation of Contract Documents shall be final, and no additional compensation shall be permitted due to discrepancies or unclarities thus resolved.
- B. Where Drawings or Specifications do not coincide with manufacturers' recommendations, or with applicable codes and standards, alert Designer in writing before installation. Otherwise, make changes in installed work as Designer requires within Contract Price.
- C. If the required material, installation, or work can be interpreted differently from drawing to drawing, or between drawings and specs, this contractor shall provide that material, installation, or work which is of the higher standard.
- D. It is the intent of these contract documents to have the contractor provide systems and components that are fully complete and operational and fully suitable for the intended use. There may be situations in the documents where insufficient information exists to precisely describe a certain component or subsystem, or the routing of a component. In cases such as this, where the contractor has failed to notify the Designer of the situation in accordance with Paragraph (A) above, the contractor shall provide the specific component or subsystem with all parts necessary for the intended use, fully complete and operational, and installed in workmanlike manner either concealed or exposed per the design intent.
- E. In cases covered by Paragraph (D) above, where the contractor believes he needs engineering guidance, he shall submit a sketch identifying his proposed solution and the Designer shall review, note if necessary, and approve the sketch.

1.7 MODIFICATIONS IN LAYOUT

- A. HVAC, and Electrical Drawings are diagrammatic. They indicate general arrangements of mechanical and electrical systems and other work. They do not show all offsets required for coordination nor do they show the exact routings and locations needed to coordinate with structure and other trades and to meet architectural requirements.
- B. In all spaces, prior to installation of visible material and equipment, including access panels, review Architectural Drawings for exact locations and where not definitely indicated, request information from Designer.
- C. Check Contract Drawings as well as Shop Drawings of all subcontractors to verify and coordinate spaces in which work of this Section will be installed.

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- D. Maintain maximum headroom at all locations. All piping, duct, conduit, and associated components to be as tight to underside of structure as possible.
- E. Make reasonable modifications in layout and components needed to prevent conflict with work of other trades and to coordinate according to Paragraphs A, B, C, D above. Systems shall be run in a rectilinear fashion.
- F. Where conflicts or potential conflicts exist and engineering guidance is desired, submit sketch of proposed resolution to Designer for review and approval.

1.8 EXISTING CONDITIONS AND PREPARATORY WORK

- A. Before starting work in a particular area of the project, visit site and examine conditions under which work must be performed including preparatory work done under other Sections or Contracts. Report conditions that might affect work adversely in writing through Contractor to Designer. Do not proceed with work until defects have been corrected and conditions are satisfactory. Commencement of work shall be construed as complete acceptance of existing conditions and preparatory work.

1.9 CODES, STANDARDS, AUTHORITIES AND PERMITS

- A. Perform work strictly as required by rules, regulations, standards, codes, ordinances, and laws of local, state, and Federal governments, and other authorities that have legal jurisdiction over the site. Materials and equipment shall be manufactured, installed and tested as specified in latest editions of applicable publications, standards, rulings and determinations of:
 - 1. Local and state building, plumbing, mechanical, electrical, fire and health department codes.
 - 2. American Gas Association (AGA).
 - 3. National Fire Protection Association (NFPA).
 - 4. American Insurance Association (A.I.A.) (formerly National Board of Fire Underwriters).
 - 5. Occupational Safety and Health Act (OSHA).
 - 6. Underwriters' Laboratories (UL).
 - 7. Massachusetts and National Electrical Codes.
 - 8. International Mechanical Code (IMC) 2018.
 - 9. International Energy Conservation Code (IECC) 2018.
- B. Material and equipment shall be listed by Underwriters' Laboratories (UL), and approved by ASME and AGA for intended service.
- C. Most recent editions of applicable specifications and publications of the following organizations form part of Contract Documents:

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1. American National Standards Institute (ANSI).
 2. American Society of Mechanical Engineers (ASME).
 3. National Electric Manufacturers Association (NEMA).
 4. American Society for Testing and Materials (ASTM).
 5. American Water Works Association (AWWA).
 6. American Society for Heating, Refrigerating and Air Conditioning Engineers (ASHRAE).
 7. Air Moving and Conditioning Association (AMCA).
 8. Sheet Metal and Air Conditioning Contractors National Association (SMACNA).
 9. American Diffuser Council (ADC).
 10. Air Conditioning and Refrigeration Institute (ARI).
 11. Thermal Insulation Manufacturers Association (TIMA).
 12. Institute of Electrical and Electronics Engineers (IEEE).
 13. Insulated Cable Engineers Association (ICEA).
 14. Certified Ballast Manufacturers (CMB).
 15. Illuminating Engineering Society (IES).
- D. Where the contract documents indicate more stringent requirements than the above codes and ordinances, the Contract Documents shall take precedence.
- E. All necessary permits, inspections, and approvals are to be obtained and paid for by this Subcontractor.

1.10 GUARANTEE AND 24 HOUR SERVICE

- A. Guarantee Work of this Section in writing for one year following the date of Substantial Completion. If the equipment is used for ventilation, temporary heat, etc. prior to Substantial Completion, the bid price shall include an extended period of warranty covering the one year of occupancy, starting from the initial date of Substantial Completion. The guarantee shall repair or replace defective materials, equipment, workmanship and installation that develop within this period, promptly and to Designer's satisfaction and correct damage caused in making necessary repairs and replacements under guarantee within Contract Price.
- B. In addition to guarantee requirements of Division 01 and of Subparagraph A above, obtain written equipment and material warranties offered in manufacturer's published data without exclusion or limitation, in DCAMM's name.
- C. Replace material and equipment that require excessive service during guarantee period as defined and as directed by Designer.
- D. Provide 24 hour service beginning on the date the project is first occupied for

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public use by the User Agency, whether or not fully occupied, and lasting until the termination of the guarantee period. Service shall be at no cost to DCAMM. Service can be provided by this contractor or a separate service organization. Choice of service organization shall be subject to Designer and DCAMM approval. Submit name and a phone number that will be answered on a 24 hour basis each day of the week, for the duration of the service.

- E. Submit copies of equipment and material warranties to Designer before final payment.
- F. At end of guarantee period, transfer manufacturers' equipment and material warranties still in force to DMH.
- G. This Paragraph shall not be interpreted to limit DMH's rights under applicable codes and laws and under this Contract.
- H. Part 2 Paragraphs of this Specification may specify warranty requirements that exceed those of this Paragraph.
- I. Use of systems provided under this Section for temporary services and facilities shall not constitute Final Acceptance of work nor beneficial use, and shall not institute guarantee period.
- J. Provide manufacturer's engineering and technical staff at site to analyze and rectify problems that develop during guarantee period immediately. If problems cannot be rectified immediately to The DMH Project Manager's satisfaction, advise Designer in writing, describe efforts to rectify situation, and provide analysis of cause of problem. Designer will suggest course of action.

1.11 RECORD DRAWINGS

- A. Comply with requirements specified in Section 017700 – CONTRACT CLOSEOUT.
- B. Provide two sets of black line prints to be used as working record drawings during construction. One set of prints shall be maintained at the job site and shall, at all times, be accurate, clear and complete, showing the actual location of all equipment ducts and piping. The working record drawings shall be available for review at the job site by the Architect's/Engineer's field representative. The marked up As Built Drawings required to be maintained under this section are Drawings M-1, M-2 & M-3.
- C. Any addenda sketches, supplementary drawings and change orders issued during the course of construction shall be transferred to the working record drawings.
- D. At the completion of all work submit an accurate, checked set of working record

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drawings. Non-availability of these drawings will postpone the final inspection until the record drawings are available.

- E. All costs related to these requirements shall be paid for by the HVAC Subcontractor.

1.12 MANUALS, AND OPERATING INSTRUCTIONS, AND PROTECTION

- A. Obtain at time of purchase of equipment, three copies of operation, lubrication and maintenance manuals for all items. Assemble literature in coordinated manuals with additional information describing combined operation of field assembled units, including as built wiring diagrams. Manual shall contain names and addresses of manufacturers and local representatives who stock or furnish repair parts for items or equipment. Divide manuals into three sections or books as follows:
 - 1. Directions for and sequence of operation of each item of HVAC system, e.g. air handling units and boilers. Sequence shall list valves, switches, and other devices used to start, stop and control system. Detail procedure to be followed in case of malfunctions. Include detailed approved flow diagrams of temperature control, heating, condensate, chilled water, condenser water, etc. as appropriate for systems provided. Include approved valve directory showing each valve number, location of each valve, and equipment or fixture controlled by valve.
 - 2. Detailed maintenance and troubleshooting manuals containing data furnished by manufacturer for complete maintenance. Include copy of balancing report.
 - 3. Lubrication instructions detailing type of lubricant, amount, and intervals recommended by manufacturer for each item of equipment. Include additional instructions necessary for implementation of first-class lubrication program. Include approved summary of lubrication instructions in chart form, where appropriate.
- B. Furnish three copies of manuals to Designer for approval and distribution. Deliver manuals no less than 30 days prior to acceptance of equipment to permit User Agency's personnel to become familiar with equipment and operation prior to acceptance.
- C. Operating instructions: Upon completion of installation or when DMH accepts portions of building and equipment for operational use, instruct User Agency's operating personnel in any or all parts of various systems. Instructions shall be performed by factory trained personnel. DMH shall determine which systems require additional instructions. Duration of instructions shall take equipment through complete cycle of operation (at least five working days). Make adjustments under operating conditions.

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- D. Each contractor shall be responsible for his work and equipment until finally inspected, tested, and accepted. Carefully store materials and equipment which are not immediately installed after delivery to site. Close open ends of work with temporary covers or plug during construction to prevent entry of obstructing material.
- E. Each separate contractor shall protect the work and material of other trades that might be damaged by his work or workmen and make good all damage thus caused.

1.13 COORDINATION DRAWINGS

- A. Refer to Section 013100 – PROJECT MANAGEMENT AND COORDINATION for coordination drawing requirements.
- B. The work shall be so performed that the progress of the entire building construction including all other trades, shall not be delayed nor interfered with. Materials and apparatus shall be installed as fast as conditions of the building will permit and must be installed promptly when and as desired.
- C. Confer with all other trades relative to location of all apparatus and equipment to be installed and select locations so as not to conflict with work of other Sections. Any conflicts shall be referred immediately to the Architect/Engineer for decision to prevent delay in installation of work. All work and materials placed in violation of this clause shall be readjusted to the Architect's/Engineer's satisfaction, at no expense to the Owner.
- D. Where work of this section will be installed in close proximity to work of other sections or where there is evidence that the work of this section will interfere with work of other sections, assist in working out space conditions to make satisfactory adjustment. Prepare and submit for approval 3/8-inch scale or larger working drawings and sections, clearly showing how this work is to be installed in relation to the work of other sections. If the work of this section is installed before coordinating with other trades or so as to cause interference with work of other trades, make changes necessary to protect conditions without extra charge.
- E. Keep fully informed as to the shape, size and position of all openings required for all apparatus and give information in advance to build openings into the work. Furnish and set in place all sleeves, pockets, supports and incidentals.
- F. All distribution systems which require pitch or slope such as sanitary drains and water piping shall have the right of way over those which do not. Confer with other trades as to the location of pipes, ducts, lights and apparatus and install work to avoid interferences.
- G. Where there is evidence that work of this Subcontractor will interfere with the

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work of other trades, this Subcontractor shall assist in working out space conditions to make satisfactory adjustments.

- H. This Subcontractor shall, with the approval of the Engineer and without extra charge, make reasonable modifications in his work as required by structural interference's, or by interference with work of other trades, or for proper execution of the work.
- I. If this Subcontractor installs his work before coordinating with other trades and his work causes interference with the work of such other trades, he shall make all necessary changes in his work to correct the condition without extra charge and as directed by the Engineer.
- J. This Subcontractor shall protect all materials and work of other trades from damage that may be caused by his work and shall make good any damages so caused.

1.14 GUARANTEE

- A. This Subcontractor shall obtain, in the Owner's name, the standard written manufacturer's guarantee for one year or greater of all materials furnished under this section where such guarantees are offered in the manufacturer's published product data. All these guarantees shall be in addition to, and not in lieu of, other liabilities which this Subcontractor may have by law or other provisions of the contract documents.
- B. This Subcontractor shall warranty workmanship and materials for a period of not less than one year from the date of substantial completion. Should any defects in materials or workmanship appear during this period, they shall be corrected or replaced by the Subcontractor to the satisfaction of the Architect, and at no expense to the Owner.

1.15 CUTTING, CORING AND PATCHING

- A. Cutting and patching through new construction using core drill and measuring larger than 4-1/2 inches in diameter, or 4-1/2 inches by 4-1/2 inches, shall be performed by Trades specializing in the specific surfaces affected, e.g., carpentry, masonry, metals, roofing, except where noted otherwise. Notify the specific Trade(s) of exact locations and sizes for openings required. The extent of masonry walls is shown on the architectural drawings. This Section's Contractor is responsible for reviewing and coordinating with other sub-contractors.
 - 1. Exposed concrete coring: Notify Contractor of exact locations and sizes for all openings required in exposed concrete, to be executed under Section 03 30 00 – Cast-in-Place Concrete.
 - 2. Concrete coring less than 4-1/2 inches: Any new penetration cut through

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- concrete less than 4-1/2 inches in width shall be executed by the specific Trade(s) installing the work.
3. Concrete coring 4-1/2 inches or larger: Notify Contractor of exact locations and sizes for openings larger than 4-1/2 inches in diameter required in concrete, to be executed under Section 03 30 00 – Cast-in-Place Concrete.
 4. Masonry openings less than 4-1/2 inches: Any new penetration cut through masonry less than 4-1/2 inches in width shall be executed by the specific Trade(s) installing the work.
 5. Masonry openings 4-1/2 inches or larger: Notify Contractor of exact locations and sizes for openings larger than 4-1/2 inches in width required in masonry, to be executed under Division 04 - Masonry, utilizing lintels, furnished per Division 05 - Metals.
 6. Exposed gypsum board: Notify Contractor of exact locations and sizes for all openings required in exposed gypsum board, to be executed under Division 09 - Finishes.
 7. Concealed gypsum board: Any new penetration cut through concealed gypsum board less than 4-1/2 inches in width shall be executed by the specific Trade(s) installing the work. Cutting and patching larger than 4-1/2 inches in diameter, or 4-4/2 inches by 4-1/2 inches to be executed under Division 09 - Finishes.
 8. Notify Architect prior to any cutting or coring larger than 2 inches.

1.16 PERMITS

- A. This Subcontractor shall be responsible for obtaining and paying for all permits and inspections required to complete all work described in this section. Refer to Division 1 specifications for more information.

1.17 STORAGE OF MATERIALS

- A. Store materials prior to their installation where designated by the General Contractor. Be responsible for all stored equipment and materials and protect all installed equipment and materials from damage.

1.18 INSPECTIONS AND TESTS

- A. If inspection of materials installed shows defects, such defective work, materials and/or equipment shall be replaced at no cost to the Owner and the inspection and tests repeated.
- B. Make all reasonable tests as required and prove the integrity of all work and leave the entire HVAC installation in correct adjustment and ready to operate.

1.19 ELECTRICAL CHARACTERISTICS

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- A. In general, and unless specifically indicated otherwise in the specifications or noted on the drawings, all HVAC equipment shall be of the HP, voltage, and phase as indicated on the drawings.
- B. Control wiring and conduit for the HVAC systems shall be furnished under this Section. Power wiring, including provisions for disconnect switches not otherwise furnished as an integral part of the mechanical equipment, is under the work of the Electrical Subcontractor.
- C. Fractional horsepower motors wired for single phase operation shall have automatic reset overload protection built into the motor.

1.20 SCAFFOLDING AND STAGING

- A. All staging, exterior and interior, required to be over eight feet in height, shall be furnished and erected by this Subcontractor and maintained in safe condition by him without charge 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 Specification.
 - 1. Erection and dismantling of staging shall be performed only by trained, certified, and experienced staging personnel qualified to perform such work.
 - 2. Copies of such certifications, clearly indicating qualifications, shall be provided to the Architect prior to commencement of such erecting and dismantling work.
- B. Provide, maintain and remove safe and adequate interior and exterior staging, ladders, scaffolding, hoists, and all other related equipment for proper and complete execution of the work of this section in accordance with requirements of the Contract Documents. Staging, scaffolding, hoists and all other related equipment shall comply with all applicable federal, state and local regulations.
- C. Staging, ladders, scaffolding, hoists and all other related equipment shall be provided, maintained and removed when no longer required.

1.21 WORK COORDINATION AND JOB OPERATIONS

- A. HVAC equipment shall not be installed in congested and possible problem areas without first coordinating the installation of same with the other trades. Relocate HVAC equipment should it interfere with the proper installation of equipment to be installed by the other trades.
- B. Particular attention is directed to the coordination of ductwork with the

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equipment of other trades being installed in and above the ceiling areas. Conflicts in mounting heights and clearances above hung ceilings shall be brought to the attention of the Architect for a decision before equipment is installed.

- C. Furnish to the other trades, all information relative to the portion of the HVAC installation that will affect them, so that they may plan their work and installations accordingly.

PART 2 - PRODUCTS

2.1 DUCTWORK AND AIR DISTRIBUTION EQUIPMENT

- A. Reference Standards: Material, construction and installation shall meet requirements of most recent editions of the following standards and references, except for more stringent requirements specified or shown on Drawings:

Standard	As Applicable To:
SMACNA HVAC Duct Construction Standards Metal and Flexible	Sheet Metal Ductwork; Duct Liners; Adhesives; Fasteners; Flexible Ductwork.
SMACNA HVAC Air Duct Leakage Test Manual	Duct Leakage Testing
SMACNA Fibrous Glass Duct Construction Standards	Fibrous Glass Ductwork; Tapes
SMACNA Ducted Electric Heat Guide for Air Handling Systems	Electric Duct Heaters
SMACNA Thermoplastic Duct (PVC) Construction Manual	PVC Ductwork
ADC and TIMA Flexible Duct Performance Standards	Flexible Ductwork
NFPA 90A	Fire Dampers; Fire Resistance Standards for Ducts and Liners
NFPA 96	Kitchen Hood Exhaust Ductwork
NFPA 45	Laboratories using chemicals
ADC Test Code 1062 R4	Ratings of Diffusers, Registers Grilles
SMACNA Guidelines for Welding Sheet Metal	Welded Galvanized, Black Iron and Stainless Steel Ductwork

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B. General

1. Provide supporting and hanging devices necessary to attach entire HVAC system including ductwork and equipment, and to prevent vibration.
2. Provide vertical and horizontal supports as required by codes to meet minimum applicable earthquake resistance standards.
3. Ductwork shall be free from vibration under all conditions of operation. Dimensions shown on Drawings for lined ductwork are net inside dimensions. Increase ductwork to accommodate lining requirements.
4. Pipe or conduit crossing duct:
 - a. No pipe, conduit, hanger, Architectural element nor structural member shall pass through duct without Designer's written approval.
 - b. Where it is impossible to re route pipe or conduit and when written approval has been obtained, increase duct size to maintain constant cross sectional area at point of interference. Provide streamlined enclosure for pipe or conduit, as illustrated in SMACNA.
5. When making offsets and transformations necessary to accommodate structural conditions, preserve full cross sectional area of ductwork shown on Drawings.
6. Ductwork shall have pressure velocity classifications as follow:

DUCT CONSTRUCT- ION CLASS	STATIC PRESSURE RATING	PRESSURE	SMACNA SEAL CLASS	SMACNA LEAKAGE CLASS	VELOCITY
10"	10"	Pos.*	A	3	2000 fpm or greater
6"	6"	Pos.*	A	3	2000 fpm or greater
4"	4"	Pos.*	A	3	4000 fpm or less
3"	3"	Pos. or Neg.	A	3	4000 fpm or less
2"	2"	Pos. or Neg.	A	6	2500 fpm or less
1"	1"	Pos. or Neg.	A	6	2500 fpm or less
½"	½"	Pos. or Neg.	A	6	2000 fpm or less

*for negative pressures over 3" w.g., refer to SMACNA Round and Rectangular Industrial Duct Construction Standards for joint and intermediate reinforcement requirements.

7. Ductwork shall have pressure velocity classifications as follow:

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DUCT CONSTRUCT- ION CLASS	STATIC PRESSURE RATING	PRESSURE	SMACNA SEAL CLASS	SMACNA LEAKAGE CLASS	VELOCITY
10"	10"	Pos.*	A	6	2000 fpm or greater
6"	6"	Pos.*	A	6	2000 fpm or greater
4"	4"	Pos.*	A	6	4000 fpm or less
3"	3"	Pos. or Neg.	A	6	4000 fpm or less
2"	2"	Pos. or Neg.	B	12	2500 fpm or less
1"	1"	Pos. or Neg.	B	12	2500 fpm or less
½"	½"	Pos. or Neg.	B	12	2000 fpm or less

*for negative pressures over 3" w.g., refer to SMACNA Round and Rectangular Industrial Duct Construction Standards for joint and intermediate reinforcement requirements.

- a. Unless otherwise specified or shown on the drawings, the following pressure classifications shall be used for the types of ductwork listed below:
 - 1) 4" Class: All supply ductwork from discharge of air units to inlets of terminal volume boxes.
 - 2) 3" Class: All fume hood, kitchen hood and smoke exhaust ductwork.
 - 3) 2" Class: All other ductwork.
8. Sealing Requirements for Class A, Leakage Class 3, Galvanized, Non-Welded Aluminum or Non-Welded Stainless Steel Ductwork:
 - a. Transverse Joints
 - 1) During assembly seal all flanged transverse joints with sealing tape of quality equal to Hardcast Inc. 1902-FR. Corners shall be sealed as described by SMACNA and when applicable per manufacturer's published procedures. After sealant has cured, seal entire joint with Hardcast Inc. RTA-50 adhesive on to Hardcast Inc. DT tape or approved equal.
 - 2) Seal all non-flanged transverse joints with Hardcast Inc. RTA-50 adhesive on to Hardcast Inc. DT tape or approved equal.
 - b. Longitudinal Seams
 - 1) Seal all longitudinal seams during ductwork fabrication with

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- Hardcast Inc. Cold Seal 1001 or approved equal.
- c. Joints and Ductwall Penetrations
 - 1) Seal all duct joints at takeoffs, access doors, damper bearing penetrations, flexible duct connections etc., with Hardcast Inc. Versa Grip 102 or approved equal.
 - 2) Note, access doors and damper rod penetrations shall be equipped with proper hardware for sealing.
 - 9. Sealing Requirements for Class A, Leakage Class 6, Galvanized, Non-Welded Aluminum or Non-Welded Stainless Steel Ductwork.
 - a. Transverse Joints
 - 1) During assembly seal all flanged transverse joints with sealing tape of quality equal to Hardcast Inc. 1902-FR. Corners shall be sealed as described by SMACNA and when applicable per manufacturer's published procedures.
 - 2) Seal all non-flanged transverse joints with Hardcast Inc. Versa Grip 102 or approved equal.
 - b. Longitudinal Seams
 - 1) Seal all longitudinal seams during ductwork fabrication with Hardcast Inc. Cold Seal 1001 or approved equal.
 - c. Joints and Ductwall Penetrations
 - 1) Seal all duct joints at takeoffs, access doors, damper bearing penetrations, flexible duct connections etc., with Hardcast Inc. Versa Grip 102 or approved equal.
 - 10. Sealing Requirements for Class B, Leakage Class 12, Galvanized, Non-Welded Aluminum or Non-Welded Stainless Steel, Ductwork.
 - a. Transverse Joints
 - 1) During assembly seal all flanged transverse joints with sealing tape of quality equal to Hardcast Inc. 1902-FR. Corners shall be sealed as described by SMACNA and when applicable per manufacturer's published procedures.
 - 2) Seal all non-flanged transverse joints with Hardcast Inc. Versa Grip 102 or approved equal.
 - b. Longitudinal Seams
 - 1) Seal all longitudinal seams during ductwork fabrication with Hardcast Inc. Cold Seal 1001 or approved equal.
 - 11. Support
 - a. Space hangers as required by SMACNA (8 ft max) for horizontal duct on 8 ft. centers, unless concentrated loadings require closer spacing.
 - b. Support vertical duct on each floor or slab it penetrates.
 - c. Supports for ductwork and equipment shall be galvanized unless specified otherwise.
 - 12. Connections
 - a. Connect inlets and outlets of air handling units and fans to ductwork with flexible connections unless fan has vibration isolator mounts inside unit with flexible connections and no external vibration isolators. Exception: Do not use flex on life safety smoke exhaust

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- fans.
- b. Indoors, flexible connections shall be neoprene coated fibrous glass fire retardant fabric, by Ventfabrics, or Durodyne. Outdoors, flexible connections shall be Dupont hypalon coated fibrous glass fire , weather , and UV resistant by Ventfabrics or Durodyne.
- c. Secure flexible connections tightly to air handlers with metal bands. Bands shall be same material as duct construction.
- d. Connections from trunk to branch ducts shall be as detailed on Drawings.
- 13. Construction
 - a. No sharp metal edges shall extend into air streams.
 - b. Install drive slips on air leaving side of duct with sheet metal screws on 6" centers.
 - c. Spin in collars shall NOT be used for branch connections in 3" or higher pressure class ductwork.
- 14. Joints
 - a. Longitudinal lock seams shall be double locked and flattened to make tight joints.
 - b. Make transverse joints, field connections, collar attachments and flexible connections to ducts and equipment with sheet metal screws or bolts and nuts. Do not use rivets and staples.
- 15. Prefabricated Transverse Duct Joints
 - a. Transverse joints in galvanized sheet metal ductwork may be made with galvanized gasketed frame and angle duct joint system by Ductmate, TDF, TDC or approved equal. Angles shall be at least 20 gauge. Prefabricated transverse duct joints shall not be used for duct 16 GA. and heavier, nor for duct 23 GA. or lighter.
 - b. Secure angles to duct with screws (using clutched arbor) or spot welds spaced as recommended by manufacturer for duct pressure class.
- 16. Elbows and Bends
 - a. Elbows and bends for rectangular ducts shall have centerline radius of 1 1/2 times duct width wherever possible. Elbows for grease exhaust and fume hood exhaust shall be full radius. Vanes or mitered duct are not allowed.
 - b. Where centerline radius is less than 1 1/2 times duct width (on supply, return and exhaust ductwork), elbows shall be radius throat (square throat allowed when turning around column or other close objects) with radius heel. For elbows whose width is greater than 48 inches and/or where shown on plans, provide splitter vanes. Install vanes in accordance with SMACNA. Where multiple elbows are separated by less than ten duct diameters use splitter (full length) vanes.
 - c. For round ductwork provide stamped elbows, with centerline radii equal to 1 1/2 times duct diameter, or gored elbows as follows:

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<u>Elbow Angle</u>	<u>No. of Gores</u>
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0° - 36°	2
37° - 72°	3
73° - 90°	5

- 1) Elbows for flat oval ducts shall have centerline radii equal to 1 1/2 times duct diameter in plane of bend, or gored elbows with gores as specified for round ducts.
- d. Elbows for flat oval ducts shall have centerline radii equal to 1 1/2 times duct diameter in plane of bend, or gored elbows with gores as specified for round ducts.
17. Access Panels/Doors
 - a. Provide proper pressure and leakage rated, gasketed, duct mounted access panels/doors for the following items with minimum sizes, as indicated. Access doors shall be of double wall construction doors in insulated ducts shall be insulated. Gauges of door materials, no. of hinges, no. and type of door locks shall be as required by the SMACNA Duct Construction Standards. Hinged doors are not acceptable, screwed or bolted access panels are not acceptable. Doors shall be chained to frame with a minimum length of 6" to prevent loss of door. For seal Class A, access doors shall be leakage rated, neoprene gasketed UL 94 HF1 listed,

DUCTMATE "sandwich" or approved equal. Door metal shall be the same as the attached duct material. For grease and high temperature ducts, door assembly shall be rated for 2300°F. The minimum sizes are:
 - 1) Fire dampers 12" x 12", or larger.
 - 2) Combination Fire/Smoke dampers 12" x 12", or larger.
 - 3) Smoke dampers 6" x 6" minimum.
 - 4) Automatic control dampers 6" x 6" minimum.
 - 5) Manual volume dampers 2 sq. ft. and larger 6" x 6" minimum.
 - 6) Inlet side to all coils 12" x 12", or larger.
 - 7) Suction and discharge sides of inline fans 24" x 24" minimum.
 - 8) At additional locations indicated on drawings, or specified elsewhere 12" x 12" minimum.
 - b. Generally access doors are not shown on the drawings, but shall be provided in accordance with the above.
18. Extractors shall have adjusting rod and locknut on outside of duct.
19. Plenums and connections to louvers:
 - a. Shall be 18 ga. minimum cross broken and properly reinforced with galvanized angle irons to SMACNA requirements.
 - b. Shall have bottom and corner seams soldered watertight at least 12" up from bottom.
 - c. Shall have neoprene gaskets or other non corrosible material to make connections to louvers watertight.
 - d. Shall pitch connection back towards the louver. Provide half coupling drain connection at bottom of plenum unless noted otherwise Pipe drain to nearest floor drain.
 - e. Shall have unused portions of louvers blocked-off with sheet metal; sealed air and water tight; insulated with 2" thick 6 lb. density rigid or

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- board insulation.
20. Duct Pressure Tests
 - a. Pressure test ducts after takeoffs and wall penetrations are in place and before applying exterior insulation. Correct any leaks.
 - b. Pressure and leak test 100% of medium and low pressure duct work at 150% of duct construction class pressure. Duct shall be constructed so there is no joint or structural failure at the test pressure.
 21. Duct Leakage Tests
 - a. Leak testing shall be per SMACNA HVAC Air Duct Leakage Test Manual. Provide orifice assembly including straightening vanes, orifice plate mounted in straight tube with properly located pressure taps, and U tube manometer or other device as specified by SMACNA. Orifice assembly shall be calibrated accurately and shall come with calibration curve. Leakage classes shall be as previously specified. Submit leak test report (per SMACNA format) for Designer review. Drawings of ductwork tested shall also be submitted with report, indicating presence of takeoffs, wall penetrations, joints, etc.
 22. Materials
 - a. Sheet metal ducts shall be constructed of hot dipped galvanized sheet metal with G90 Commercial coating according to ASTM 527 unless specified otherwise.
 - b. Stainless steel (SS) ductwork shall be 18 gauge for kitchen hoods; and as required by SMACNA for other ducts. Materials shall be 316/No. 4 finish for exposed duct, 304/No. 1 finish for concealed ducts. Joints and seams shall be welded as required by SMACNA Guidelines for Welding Sheetmetal.
 - c. Aluminum ductwork shall be Alclad 3003 1414 or alloy 5052 H32, of thickness required by the SMACNA duct construction standards with Alloy 6061 bracing angles, and Pittsburgh lock longitudinal corner and double side seaming.
 - d. Flexible Ductwork
 - 1) Flexible ductwork, connecting to uninsulated or unlined duct, shall be polyester core with corrosion resistant helical wire reinforcing. The polyester core shall be minimum two ply and shall have a minimum thickness of 0.0017". Flex duct shall be U.L. rated for 6" W.C. positive pressure, 2" W.C. negative pressure with a maximum velocity of 4000 FPM. Flexduct must be listed as a Class 1 Connector according to UL 181 and shall meet the requirements of NFPA 90A maximum ASTM E 84 fire hazard rating shall be 25 flame spread, 50 fuel contributed and 50 smoke developed. Uninsulated flexible duct shall be equivalent to Wiremold, Type WB, or Flexmaster Types 2 and 4 (not type 9).
 - 2) Flexible duct connected to insulated or lined duct shall also be insulated and shall be equivalent to Wiremold Type WK or

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Flexmaster Types 2 or 4 (not type 9), with 1 1/2", 3/4 lb. density fiberglass insulation and an aluminized reinforced vapor barrier.

- 3) Submittals shall include data on no. of polyester plies and minimum thickness of polyester core, in addition to other data listed above required to ensure that submitted product meets the requirements of these specifications.
- 4) If flexduct other than the model numbers of the vendors listed above is submitted, a sample of the flex shall be submitted to the Designer. The Designer shall have sole discretion in determining whether the submitted flex is equivalent to that of the named vendors above.
- 5) Unless otherwise indicated, flexible duct shall not exceed 5'-0" long.
- e. Rigid PVC ductwork shall be thermally formed ASTM D 1784 69 Class 12454 B with 3/16" thick wall.

C. 2" and Lower Pressure Class Ductwork, Rectangular:

1. Ducts wider than 19" with more than 10 square feet of unbraced panel shall be beaded or cross broken.
2. Internal stiffening struts shall only be used upon prior written approval of the Designer.
3. Make changes in duct size with tapered connections as required by SMACNA. Changes shall NOT exceed 30° from line of air flow. Take off to the diffusers shall be 45° leading edge type or Bellmouth type.
4. Transverse joints shall be TDF/TDC or slip joints; use flat or standing seam according to SMACNA. Where duct size requires standing seam but space restrictions dictate flat seam, notify Designer prior to fabrication.

D. 2" and Lower Pressure Class Ductwork, Round:

1. Joints
 - a. Longitudinal joints shall be spiral seam, butt welded, lap and seam welded, or ACME lock grooved seam. Snap lock seams shall be used on 1/2" w.g. pressure class duct only.
 - b. Transverse joints shall be beaded sleeve joint or other approved joints listed in SMACNA. Use three or more sheet metal screws at 15" uniform intervals along circumference of joints.
2. Branch fittings shall be conical tee (Buckley or equal) or combination tee as shown in SMACNA.
 - a. 3" and 4" Pressure Class Ductwork Rectangular
3. Joints
 - a. Joints shall be prefabricated type by TDC, TDF or Ductmate. See Prefabricated Joints paragraph for specific requirements.
4. Duct reinforcement spacing and type shall comply with SMACNA.
5. Ductwork on both sides of transitions shall be run in same horizontal axis.

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6. Diverging section slope shall be 1 1/2" per foot or less if possible.
7. Contraction section slope shall not exceed 7" per foot.
8. Takeoffs shall be 45° leading edge type except that Bellmouths (Buckley or equal) may be used for takeoffs to terminal boxes if the distance between the box and point of takeoff is less than 8 ft.
9. Ducts with an aspect ratio greater than 3:1 shall be minimum of 18 gauge unless a thicker gauge is required by SMACNA.

E. Flexible Rigid Duct

1. Flexible ductwork shall be Flexmaster Triple Lock Buck Duct Flexible Air Duct (insulated or non insulated) as manufactured by Buckley Associates or equal. Flexible duct, non insulated, shall be Underwriters Laboratory Listed UL 181 Class 0 air duct and constructed in accordance with NFPA Standards 90A and 90B. It shall have a smoke/flame spread rating of 50/25.
2. Duct shall be made from a tape of dead soft aluminum sheet, spiral wound into a tube and spiral corrugated to provide strength and stability. The joint shall consist of a triple lock mechanically performed without the use of adhesives to make a durable airtight seam. A double lock is not acceptable.
3. Flexible duct connected to insulated or lined duct shall also be insulated. Flexmaster insulated flex shall have a gray Fire Retardant Polyethylene outer jacket with a ½ lb. density, 1 1/2" thick fiberglass insulation blanket, factory wrapped. Flexible Duct, insulated, shall be Underwriters Laboratory Listed and constructed in accordance with NFPA standards 90A and 90B. It shall have a smoke/flame spread rating of 50/25.
4. The flexible duct shall be supported as required.
5. Flexible duct work shall be rated at 12" positive pressure. Duct from 3 to 16" shall have a negative pressure of 12", 8" for duct work 18 and 20.
6. All flexible duct shall be individually cartoned and labeled for delivery to the job site for maximum protection.
7. Submittals shall include data on minimum thickness of aluminum core, in addition to other data listed above, required to ensure that submitted product meets the requirements of these specifications.
8. Provide sealing compound for installation. See further paragraphs in this specification and details for other installation requirements.

F. Volume Dampers

1. Provide Young Regulator manual adjustable rectangular opposed blade dampers for duct heights less than 12" with factory installed locking hand quadrants extended 2" for all dampers installed in externally insulated duct:
 - a. On each supply, return and general exhaust duct take off.
 - b. At each take off to register, grille or diffuser (not all are shown on Drawing).
2. Dampers are manufactured approximately 5/16" smaller in width and 1/8" smaller in height than size of duct in which they are installed; e.g., nominal damper size is 24" x 10"; actual size is approximately 23 11/16" x 9 7/8".
3. Damper frame shall be constructed of #6063 extruded aluminum reinforced

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channel with minimum thickness of .050". Opposed damper blades shall be #6063 extruded aluminum with minimum thickness of .050" and shall include reinforcing ribs. Each blade shall be supported in the damper frame by individual Teflon axle bearings, and shall be driven by stainless steel connecting slide linkage controlled by 3/8" square steel control shaft.

4. Note: All required volume dampers may not be indicated on drawings but dampers shall be provided as necessary for systems balancing.
5. Dampers 12" and larger in height shall be opposed multi blade equal to Greenheck, Nailor, or Vent Products.
6. Where dampers are inaccessible, use Young Regulator locking type ceiling regulators and miter gear or worm gear for all horizontal dampers. Bearing coupling for bottom duct control may be used for shaft on vertical blade dampers. The 3/8" rod between ceiling regulator and damper shall be provided by contractor.
7. Damper blades shall be two gauges heavier than adjoining ductwork, and shall be riveted to supporting rods. Hem over edges parallel to rods.
8. Brackets shall be galvanized metal, secured to ductwork with sheet metal screw with locking quadrant arms (see seal class section for additional requirements). Provide 2" handle extension for all dampers on externally insulated ductwork.
9. Note: All required volume dampers may not be indicated on Drawings but dampers shall be provided as necessary for system balancing.

2.2 PIPING AND FITTINGS

- A. Hot and chilled water piping 2" diameter and smaller shall be type "L" hard drawn copper tubing with wrought copper fittings. Hot water piping/ Chilled Water piping 2-1/2" diameter and larger shall be Schedule 40 black steel pipe, ASTM A-53, Grade B, ERW.
- B. Condensate drain piping shall be Schedule 40 PVC with solvent joints. Provide P-trap for each condensate drain line connection. Provide clean-outs at each change in direction of piping. Use tees and a 45-degree fitting for a branch line joining a main. Clean-outs shall be made with threaded plug tees. Pitch piping down in direction of flow.
- C. Fittings & Couplings:
 1. Copper Fittings:
 - a. Fittings for copper tubing shall be wrought copper fittings. Provide dielectric fittings for all connections between ferrous and non-ferrous piping.
 - b. At the option of the HVAC Subcontractor, copper piping 2" and under shall be joined with ProPress fittings as manufactured by Viega LLC or approved equal. Piping fittings and components shall be

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capable of withstanding 150 psig. Working pressure at 200 deg F. Piping and fittings shall be installed per manufacturer's installation instructions. Housing shall be copper or bronze. Sealing element shall be EPDM. Pipe and fittings shall be installed using manufacturer's specific tools and using smart connect technology.

2.3 INSULATION

- A. Provide pipe covering and duct insulation of the type hereinafter specified on the following: hot water piping, cold water make-up piping, refrigerant piping and sheet metal ducts. All sealers, solvents, tapes, adhesives and mastics used in conjunction with this section of the specifications shall possess the maximum safety quantities available and Standards #90A and #90B. Insulation shall be fiberglass except as specified hereinafter having a minimum density of four pounds per cubic foot. Insulation shall be as manufactured by Armstrong, CertainTeed, Johns-Manville, Knauf, Owens/Corning, or equal and installed in accordance with the manufacturer's recommendations.
- B. Piping: All new piping and fittings throughout the building, as shown on the drawings, shall be insulated with Owens/Corning Fiberglass, or equal, 25 ASJ glass fiber insulation in molded sections. Glass fiber insulation shall have a minimum density of 3-1/4 pounds per cubic foot with a thermal conductivity ("K" value) of 0.23 at 75°F mean temperature. All piping shall have a factory applied all service vapor barrier jacket. The end joints of the insulation shall be sealed with factory furnished end joint sealing tape. Longitudinal seams shall be sealed with Benjamin Foster 85-75 adhesive. The thickness of insulation to be applied to piping shall be as follows:
 - 1. Hot and chilled water supply and return piping less than 1.5" in diameter shall be insulated with 1.5" thick insulation and piping 1.5" and greater in diameter shall be insulated with 2" thick insulation. Staples shall not be used in any part of this installation.
 - 2. The end joints of insulation shall be tightly butted and covered with factory furnished end joint sealing tapes. The jacket overlap shall be sealed with an approved sealer which shall not mar the jacket finish. Staples shall not be used for fastening insulation.
 - 3. All fittings, valves and flanges shall be insulated with the same thickness of fiberglass as on the piping, with mitered segments of pre-molded F/G fittings wired in place after which a one mil aluminum foil vapor barrier shall be wrapped tightly over the insulation with all laps sealed with the manufacturer's vapor seal mastic. Wet coats of vapor seal mastic with imbedded glass fabric shall be applied to fittings, per the manufacturer's recommendations. Staples or tacks shall not be used.
- C. Ductwork: All plenums behind intake and exhaust louvers shall be insulated with 1" thick 703 Series Fiberglass board insulation, with 0.0025-inch aluminum foil

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facing that has been tested in accordance with ASTM E-84, having a flame spread rating of 25 maximum and smoke developed rating of 50 maximum. Install per manufacturer's recommendations.

1. All air conditioning supply air ducts and return air ducts above ceilings and outdoor air ducts shall be insulated with 1-1/2" thick fiberglass insulation wrap with 0.0025" aluminum foil facing that has been tested in accordance with ASTM E-84, having a flame spread rating of 25 maximum and smoke developed rating of 50 maximum.

2.4 PIPE HANGERS AND SUPPORTS

- A. Provide pipe supports, hangers, and other devices necessary to support firmly and substantially the piping and the apparatus described in the specifications and shown on the drawings. Hangers shall be arranged to maintain the required grading and pitch, to prevent vibration, and to provide for expansion and contraction. All hangers and supports shall be in compliance with seismic requirements of the State Building Code.
- B. Where the weight of piping or other apparatus makes it impracticable to support same from the ceiling alone, flange pipe standards shall be installed to support the weight of piping, valves and fittings.
- C. Piping shall not be supported from ductwork, breeching, equipment, ceiling suspension systems or other piping.
- D. Brackets of approved type may be used along walls.
- E. Each vertical line shall be supported at its base using a suitable hanger placed in the horizontal line near the riser.
- F. Piping 2-inch diameter and smaller shall be supported by "A" bands with adjustable steel rod with concrete insert or beam clamp. Piping 2-1/2 and above diameter shall be supported by clevis hangers with adjustable steel rod and one concrete insert or beam clamp. Two rod roll hangers shall be used in lieu of the hanger type specified where space limitations necessitate.
- G. 1A bands and clevis hangers shall be installed outside the thermal insulation. Provide 18 gauge, 12" long pipe covering protection shields on insulated piping at 1A bands and clevis hangers. Provide galvanized metal shields between pipe hangers and insulation where saddles are not required and where hangers are installed outside of insulation.
- H. The maximum spacing between pipe supports shall be in accordance with the latest addition of ANSI/MSS SP-69 & SP-58 Tables 3 & 4. The following excerpts from the tables shall be verified prior to work.

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1. Horizontal Copper Pipe:

<u>Nominal Pipe Size (in)</u>	<u>Rod Diameter (in)</u>	<u>Maximum Spacing (ft)</u>
1/4 – 3/4	3/8	5
1	3/8	6
1-1/4	3/8	7
1-1/2	3/8	8
2	3/8	8
2-1/2	1/2	9

- I. These spans apply to straight runs of piping without concentrated loads. Spans shall be shorter as required by changes in direction or by concentrated loads such as strainers, valves, or related items. Supplementary steel shall be furnished and installed as required by ANSI/MSS SP-58.
- J. The first three hangers on the suction and on the discharge of each pump shall be provided with Type 30N spring hangers as manufactured by Mason Industries or equal as manufactured by Carpenter and Patterson or Grinnell. The HVAC Contractor shall use necessary means to install all piping and equipment with minimal vibration and sound that is normal to the pumps as verified by the pump manufacturer.

2.5 SLEEVES AND PENETRATIONS

A. Pipe Sleeves

1. Sleeves through floors and through exterior, structural and fire rated construction shall be hot dipped galvanized Schedule 40 steel pipe.
2. Sleeves through partitions and non fire rated construction shall be 26 gauge galvanized steel with lock longitudinal seams, or approved plastic pipe.
3. Provide waterproofing membrane locking devices at floors. Provide 150 lb. slip on welding flanges at exterior wall penetrations.

B. Duct Sleeves and Openings

1. Sleeves through floors, through exterior structure, through fire rated construction and through smoke partitions that require smoke dampers shall be Schedule 40 galvanized steel pipe for round duct and shall meet SMACNA Fire Damper and Heat Stop Guide for rectangular and flat oval ducts. Fireproof packing shall be applied to seal any openings between sleeve and wall. Materials shall maintain the fire rating of the wall, and shall be installed in accordance with the SMACNA Fire Damper and Heat Stop Guide.
2. Openings in walls, partitions and other fire rated construction that do not

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- require smoke dampers shall meet NFPA 90A, Section 3 3.8.
3. Materials for prepared openings in partitions shall match construction penetrated.

C. Pipe Sleeve Packing

1. Packing between the pipe and the sleeve (or wall or slab opening) in fire rated walls or slabs shall be a combination of fireproof insulation and fireproof caulk. The combination of materials shall have the same fire rating, in hours, as the wall or slab, as tested in accordance with the latest edition of ASTM E 814 (UL 1479). The combination of materials shall be classified by UL, (fill, void or cavity materials) for the fire rating required and shall be listed as a numbered system in the UL Fire Resistance Directory. Fiberglass shall not be used as the insulation material.
2. Acceptable fireproof insulation materials shall be: Kaolin (Kaowool by Babcock and Wilcox); ceramic fiber blanket (Fiberfrax by Standard Oil) or fire rated mineral wool (Thermafiber by USG). Acceptable fireproof caulks shall be: Silicone (Firestop by Dow Corning, Hilti CS240); ceramic fiber (Fyreputty by Standard Oil) or intumescent synthetic elastomer (Fire Barrier Caulk by 3M, Hilti CS2420).
3. Packing for sleeves that do not require maintenance of fire rating shall be oakum, silicate foam, ceramic fibre or mineral fibre with approved sealant. Pack or foam to within 1" of both wall surfaces. Seal penetration packing with approved caulking and paintable water proof mastic surface finish or silicone caulking.
4. All materials must be installed in accordance with manufacturer's instructions; all gaps must be sealed. Finish caulk flush with wall or slab surface if piping runs exposed.

D. Other Water proof Pipe Penetrations

1. Modular mechanical penetration seals shall be interlocking synthetic rubber links shaped to fill annular space continuously, with galvanized carbon steel bolts, nuts and pressure plates to expand rubber seal between pipe and sleeve. Sleeve seal shall be water tight.
2. Prefabricated modular sleeves shall be Mason Industries (SWS) or approved equal stiffened galvanized steel sleeves with preformed closed cell elastomeric seal (non fire rated) or preformed mineral fiber or silicone foam seal (fire rated).
3. Provide water proof 1" single ring set in silicone and bolted to floor or wall at chipped and drilled penetrations of existing slabs on grade and existing walls below grade.

2.6 ESCUTCHEONS

- A. Provide adjustable escutcheons on exposed piping that passes through finished

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floors, walls and ceilings. Escutcheons shall be chromium plated cast brass, sized to cover sleeve opening and to accommodate pipe and insulation.

2.7 VIBRATION ISOLATION (NON-SEISMIC)

A. General

1. Manufacturer Responsibility
 - a. Manufacturer of vibration equipment shall have the following responsibilities:
 - 1) Guarantee specified isolation system deflections.
 - 2) Provide installation instructions, drawings and field supervision to insure proper installation and performance of systems.
2. Quality Assurance
 - a. All vibration isolators shall have calibration markings or some method to determine adjustment, the actual deflection under the imposed load after installation and adjustment.
 - b. All isolators shall operate within the linear position of their load vs. deflection curves. Load vs. deflection curves shall be furnished by the manufacturer and must be linear over a deflection range of not less than 50% above the design deflection.
 - c. The theoretical vertical natural frequency for each support point, based upon load per isolator and isolator stiffness, shall not differ from the design objectives for the equipment as a whole by more than +10%.
 - d. Substitution of internally isolated equipment in lieu of the isolation specified in this section, is acceptable provided all conditions of this section are met. The equipment manufacturer shall provide a letter of guarantee stating that the specified noise and vibration levels will be obtained or the cost of converting to the specified external vibration isolation shall be born by the equipment manufacturer.
 - e. The following specifications describe spring hangers with 30 degree misalignment feature. This requirement is mandatory. the Contractor shall replace any hangers without the 30 degree capability discovered on site at no additional cost to DMH.

B. Products

1. Description
 - a. All vibration isolation devices shall be the product of a single manufacturer. Products of other manufacturers are acceptable provided their systems strictly comply with intent, structural design, performance, and deflections of the base manufacturer.
 - b. Acceptable manufacturers of vibration isolation products shall be: Mason Industries, Amber Booth Company, Peabody Noise Control, Korfund Dynamics Corporation, Vibration Mountings and Equipment, Vibration Eliminator Co., provided they meet the

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requirements of this specification. Mason Industries model numbers have been used in this specification to establish quality of components, but are in no way to limit competitive bidding by other manufacturers.

- c. Refer to Table A at the end of this article for application of the various types listed to appropriate equipment and efficiency level.
- 2. Vibration Isolation Types
 - a. Vibration Isolators
 - 1) Type A: Spring Isolator
 - a) Having a minimum OD to OH of 0.8:1.
 - b) Corrosion resistance where exposed to corrosive environment with:
 - 2) (Springs cadmium plated or electro-galvanized.
 - 3) (Hardware cadmium plated.
 - 4) (All other metal parts hot-dip galvanized.
 - a) Reserve deflection (from loaded to solid height) of 50% of rated deflection.
 - b) Minimum ¼" thick neoprene acoustical base pad on underside.
 - c) Designed and installed so that ends of springs remain parallel.
 - d) Non-resonant with equipment forcing frequencies or support structure natural frequency.
 - e) Mason Ind. Type SLF
 - 5) Type B: Spring isolator shall be the same as Type A with the following additional features:
 - a) Built-in vertical limit stops with minimum ¼" clearance under normal operation.
 - b) Tapped holes in top plate for bolting to equipment.
 - c) Capable of supporting equipment at fixed elevation during equipment installation. Installed and operating heights shall be identical.
 - d) Adjustable and removable spring pack with separate neoprene isolation pad.
 - 6) Mason Ind. Type SLR
 - 7) Type C: Spring hanger rod isolator.
 - a) Spring element seated on a steel washer within a neoprene cup incorporating a rod isolation bushing.
 - b) Steel retainer box encasing the spring and neoprene cup.
 - c) When used on ductwork, provide eyebolts for attachment to duct straps.
 - d) Mason Ind. Type H5, WHS
 - 8) Type D: Double deflection neoprene mountings.
 - a) All metal surfaces shall be neoprene covered and have friction pads top and bottom.
 - b) Be capable of .035" deflection at rated load.
 - c) Steel rails shall be employed to compensate for overhang on units such as small vent sets, close coupled pumps,

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- etc.
- d) Mason Ind. Type ND or Rails Type DNR.
- 9) Type E: Elastomer hanger rod isolator.
 - a) Molded (min. 1-3/4" thick) neoprene element with projecting bushing lining the rod clearance hole. Static deflection at rated load shall be a minimum of 0.35".
 - b) Steel retainer box encasing neoprene mounting capable of supporting equipment up to four times the rated capacity of the element.
 - c) Mason Ind. Type HD
- 10) Type F: Combination spring/elastomer hanger rod isolator.
 - a) Spring and neoprene elements in a steel retainer box with the features as described for Type A and E isolators.
 - b) Mason Ind. Type DNHS
- 11) Type G: Pad type elastomer isolator.
 - a) 0.75" minimum thickness, 50 psi maximum loading, ribbed or waffled design.
 - b) Minimum 0.1" deflection.
 - c) 1/16" galvanized steel plate between multiple pad layers.
 - d) Load distribution plate where attachment to equipment bearing surface is less than 75% of the pad area (Type "GM").
 - e) Mason Ind. Type Super W pad.
- 12) Type H: Pad type elastomer isolator.
 - a) Laminated canvas duct and neoprene, maximum loading 1,000 psi, minimum 1/2" thick.
 - b) Load distribution plate where attachment to equipment bearing surface is less than 75% of the pad area (Type HM).
 - c) Mason Ind. Type HL Pad.
 - d) NOTE: When bolting is required, neoprene and duck washers and bushings shall be provided to prevent short circuiting.
- 13) Type I: Thrust restraints.
 - a) A spring element similar to Type A isolator shall be combined with steel angles, backup plates, threaded rod, washers and nuts to produce a pair of devices capable of limiting movement of air handling equipment to 1/4".
 - b) Restraint shall be easily converted in the field from a compression type to tension type.
 - c) Unit shall be factory precompressed.
 - d) Thrust restraints shall be installed on all cabinet fan heads, axial or centrifugal fans whose thrust exceeds 10% of unit weight.
 - e) Mason Ind. Type WB
- 14) Type J: Steel Rails
 - a) Steel members of sufficient strength to prevent

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- equipment flexure during operation.
- b) Height saving brackets as required to reduce operating height and cradle the unit.
- c) Mason Ind. Type ICS
- 15) Type K: Pipe anchors
 - a) All directional acoustical pipe anchor, consisting of a telescopic arrangement of two sizes of steel tubing separated by a minimum ½" thickness of Type H pad.
 - b) Vertical restraints shall be provided by a similar material arranged to prevent vertical travel in either direction.
 - c) Allowable loads on isolation materials shall not exceed 500 psi. And the design shall be balanced for equal resistance in any direction.
 - d) Mason Ind. Type ADA
- 16) Type L: Isolated clevis hanger
 - a) Combination clevis or rod roller hanger and a Type C, (LC), E (LE), or F (LF) isolation hanger.
 - b) System shall be precompressed to allow for rod insertion and standard leveling.
 - c) Mason Ind. Type CIH
- 17) Type M: Flashable restrained isolator
 - a) Shall have all features of Type B isolator.
 - b) Shall have waterproof spring covers for adjustment or removal of springs.
 - c) Unit shall have a structural top plate for welding or bolting of supplementary support steel.
 - d) Isolator shall accept 2" roofing insulation and be flashed directly into the waterproofing membrane.
 - e) To be complete with wood nailer and flashing.
 - f) Mason Ind. Type REVRS

C. Execution

- 1. General
 - a. Isolation systems must be installed in strict accordance with the manufacturer's written instructions. Vibration isolators shall not cause any change of position of equipment resulting in stress on equipment connections.
- 2. Equipment Installation
 - a. Equipment shall be isolated as per Table A at the end of this section.
 - b. Place floor mounted equipment on 4" high concrete housekeeping pads properly doweled or expansion shielded to the deck. Mount vibration isolators and/or bases on housekeeping pads. Concrete work specified in Section 033000 – CAST-IN- PLACE CONCRETE.
 - c. Additional Requirements
 - 1) The minimum operating clearance under inertia bases shall be 2".

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- 2) The minimum operating clearance under other bases shall be 1".
 - 3) All bases shall be placed in position and supported temporarily by blocks or shims, as appropriate, prior to the installation of the machine, isolators.
 - 4) The isolators shall be installed without raising the equipment.
 - 5) After the entire installation is complete, and under full operational load, the isolators shall be adjusted so that the load is transferred from the blocks to the isolators are properly adjusted, shall be barely free and shall be removed. Remove all debris from beneath the equipment and verify that there is no short circuits of the isolation. The equipment shall be free in all directions.
 - 6) Install equipment with flexibility in wiring.
3. Piping and Ductwork Isolation
- a. All piping and ductwork is included in this section.
 - b. Installation
 - 1) Isolate piping and ductwork outside shafts as follows:
 - a) All in mechanical rooms.
 - b) All exposed on roof.
 - c) All within 50 ft. or 100 pipe diameters (whichever is greater) from connected rotating or reciprocating equipment and pressure reducing stations.
 - d) Control air piping, from compressor discharge to receiver.
 - 2) The isolators shall be installed with the hanger box attached to, or hung as closely as possible to the structure.
 - 3) The isolators shall be suspended from substantial structural members sized for 0.08" deflection at center of span, not from slab diaphragm, unless specifically permitted.
 - 4) Hanger rods shall not short circuit the hanger box.
 - 5) Horizontal suspended pipe 1¼" to 2" and all steam piping shall be suspended by Type E isolators with a minimum 3/8" deflection. Water pipe larger than 2" shall be supported by Type F isolators with a minimum 1" deflection or same deflection as equipment for the first 3 locations nearest equipment whichever is greater.
 - a) Type L hangers may be substituted for the above.
 - 6) Ductwork shall be supported by Type C (WHS) hangers.
 - 7) Horizontal floor and roof supported pipe shall be the same as C.3.b.5 except use isolators Type D and Type A, respectively.
 - 8) Vertical riser pipe supports under 2" diameter shall utilize Type H isolation.
 - 9) Vertical riser guides, if required shall avoid direct contact of piping with the building.
 - 10) Pipe anchors or guides where required, shall utilize Type K isolators.
 - 11) Riser sway supports, where required, shall utilize two (2)

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neoprene elements (Type G or H) to accommodate tension and compression forces.

- 12) Pipe extension and alignment connectors: Provide Type FC-2 connectors at riser takeoffs, cooling and heating coils and elsewhere as required to accommodate thermal expansion and misalignment.
- 13) Install Type FC-1 flexible connectors at all connections of pipe to equipment such as pumps, chillers, cooling towers and as shown on the drawings.
- 14) Install FC-2 type connectors at all locations which exceed temperature limitations of FC-1.
- 15) For control air piping, provide two flexible connectors Type FC-2 90° to each other in the compressor discharge piping to the receiver. When the receiver is remote from the compressor, isolate the piping between the compressor and receiver with Type C isolators having 3/8" deflection. The receiver shall be isolated with Type D isolators having 3/8" deflection.

4. Inspection

- a. Upon completion of installation of all vibration isolation devices, the local representative shall inspect the complete project and certify in writing to the Contractor that all systems are installed properly, or require correction. The Contractor shall submit a report to DCAMM's Project Manager, including the representative's report. Certifying correctness of the installation or detailing corrective work to be done.

TABLE A

			NON-CRITICAL			CRITICAL		
EQUIPMENT	HP	MTNG	ISOL	DEFL	BASE	ISOL	DEFL	BASE
AC Units (Dx)		Flr Clg	D -	.30 --	-- --	A F	.75 .75	J* --
Air Cooled Cond. or Chillers		Fir	-	--	--	A	2.50	B-4
Axial Fans		Flr Clg	D -	.30 --	-- --	A** F	See Guide	-- --
Centrif. Fans Arr. 1 & 3		Flr Clg	D -	.30 --	B-1 --	A** F	See Guide	B-1 ***
Arr. 9 & 10		Flr Clg	D -	.30 --	J --	A** F	See Guide	J J
Computer Rm Units		Flr Clg	D -	.30 --	B-7 --	A F	.75 .75	B-7 --

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Condensate Pumps		Flr
Unit/Cab. Heaters		Clg

D	.30	J
-	--	--

D	.30	J
E	.30	--

*Used on vertically arranged units. Rails to be 1½ times the unit height.

** Substitute TYPE B isolator for roof installations.

***Substitute TYPE B-2 base for Class 2 & 3 fans.

DEFL. GUIDE	
RPM	DEFL
< 400	3.5"
< 600	2.5
> 600	1.5

5. Notes:
 - a. "ISOL" and "BASE" column indicates letter type as appears in the specs.
 - b. "MTNG" refers to method of support of equipment from the structure.
 - c. "SEE GUIDE" indicates isolator deflection selection to be taken from RPM/DEFLECTION Guide at bottom of table.

2.8 FAN COIL UNIT (FCU)

- A. Furnish and install a horizontal hot water/chilled water four-pipe fan coil unit with performance characteristics as scheduled on the design drawings. Units shall be complete with hot water coil, chilled water coil, fan, motor and controls. Units shall be Trane, Model BCHE or equal as manufactured by Trane, Carrier, Lennox or approved equal.
- B. Unit Casing:
 1. The entire air handler shall be constructed of galvanized steel. The removal of access panels shall not affect the structural integrity of the unit once the unit is installed. Contractor shall be responsible to provide connection flanges and all other framework that is needed to properly support the unit.
 2. Access panels shall be on side of the unit in all sections to allow easy access to drain pan, filter, coil(s), and motor components for cleaning, inspection, and maintenance.
 3. Units shall each ship as fully assembled modules, including all coils, fans, motors, mixing box, attenuators and filters.
 4. Access Panels: Removable access panels shall be provided on side of the unit to facilitate service access to drain pans, motors, coil(s). Access panel for filter removal shall be provided on bottom of unit.
 5. Cabinet: Casing shall be manufactured of heavy gauge galvanized steel.
 6. INSULATION - High density, matte-faced - Interior surface of unit casing shall be acoustically (in single-wall modules) and thermally lined. Insulation shall have a minimum R-Value of 4 and shall be UL Listed. The

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insulation shall comply with NFPA- 90A and B, and UL191 requirements.

C. Coils:

1. Install coils such that headers and return bends are enclosed by unit casing to ensure that if condensate forms on the header or return bends, it is captured by the drain pan under the coil.
2. Coils shall be manufactured with plate fins to minimize water carryover and maximize airside thermal efficiency. Fin tube holes shall have drawn and belled collars to maintain consistent fin spacing to ensure performance and air pressure drop across the coil are as scheduled. Tubes shall be mechanically expanded and bonded to fin collars for maximum thermal conductivity. Use of soldering or tinning during the fin-to-tube bonding process is not acceptable due to the inherent thermal stress and possible loss of bonding at that joint.
3. Construct coil casings of galvanized steel. End supports shall have belled tube holes to minimize wear of the tube wall during thermal expansion and contraction of the tube.
4. Hydronic Coils
 - a. Supply and return header connections shall be clearly labeled on outside of units, such that direction of coil water-flow is counter to direction of unit air-flow.
 - b. Coils shall be proof tested to 450 psig and leak tested to 300 psig air pressure under water.
 - c. Headers shall be constructed of round copper pipe.
 - d. Unit shall be provided with minimum 3/8 inch O.D. copper coils. All fins shall be aluminum.
 - e. All coil connections shall be on same side of unit.

D. Drain Pan:

1. Drain Pan(s) shall be constructed of corrosion resistant material. Acceptable materials include polymer or stainless steel. Units with cooling coils shall have drain pans under complete cooling coil section that extend beyond the air-leaving side of the coil to ensure capture of all condensate in section.
2. Drain pan manufacturer shall either insulate bottom of drain pan with closed cell foam or provide double wall internally insulated construction to eliminate bottom sweating.
3. Drain pan shall be sloped in two planes, pitched toward drain connections to ensure complete condensate drainage when unit is installed level and trapped per manufacturer's installation instructions. Units without drain pans sloped in two planes shall coat drain pans with anti-microbial treatment.
4. Drain pan(s) shall have main and auxiliary drain connections with auxiliary outlet higher than the main connection.
5. Coil(s) shall be mounted above the drain pan to facilitate easy and complete inspection, cleaning, and removal. Coil(s) may not sit in drain pan.

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- E. Fans: Provide single-wheel, dual-width, dual-inlet, forward curved centrifugal fans as specified on the schedule. All fans shall be dynamically balanced.
 - F. Motors:
 - 1. All motors shall be factory-installed and run tested. To facilitate field replacement of motors, a removable fan inlet cone shall be provided on the drive side of the fan/motor assembly.
 - 2. Motor shall be ECM programmable type. The motor shall be preprogrammed in the factory to meet the specified airflow requirements.
 - 3. Fan motor shall have permanently lubricated and sealed bearings, protected by an internal thermal overload.
 - 4. Single phase motors shall be selected to operate continuously at 104 F (40 C) ambient without tripping on overloads. Motors shall have a +/- 10 percent voltage utilization range to protect against voltage variation.
 - 5. Manufacturer shall provide for each fan a nameplate with the following information to assist air balance contractor in start-up and services personnel in maintenance:
 - a. Fan motor part number
 - b. Fan design RPM and motor HP
 - c. Motor Full Load Amps
 - G. Filters: Provide removable one- or two-inch thick filters easily removable from bottom of the unit. All units shall use standard filter sizes.
 - H. Controls:
 - 1. Fan motor and end devices shall be wired back to a control box enclosure. A junction box shall be provided for single point power connection.
 - 2. The control package shall include the following at a minimum:
 - a. 24 VAC transformer
 - b. Disconnect switch
 - 3. The control package shall include the following options :
 - a. Fan status relay
 - 4. Control Interface - Unit shall be factory run tested and end devices shall be factory wired to terminal strip in an external junction box and tested for wiring continuity.
- 2.9 AUTOMATIC TEMPERATURE CONTROL SYSTEM
ELECTRIC/ELECTRONIC - NOT DIRECT DIGITAL
- A. General:
 - 1. Provide complete electric/electronic temperature control system by Johnson Controls, Inc., Landis & Staefa, Honeywell or Barber Coleman.
 - 2. All systems shall be provided directly by the manufacturers listed above. DEALERS OR REPRESENTATIVES ARE NOT ACCEPTABLE. The

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manufacturer must provide full support during the guarantee.

B. Scope

1. Control system shall consist of thermostats, humidistats, temperature transmitters, controllers, automatic valves and dampers, damper operators, control panels, electrical wiring and other components required to fill intent of Specifications and provide for complete and operable system. Control equipment shall be fully proportioning, except as noted otherwise. Sequence of operation shall be as indicated on Drawings.
2. In general this Specification morning warm up is intended to cover following: occupied unoccupied control, summer/winter changeover controls, central station air handling unit controls, hot water controls and interlocking of fans and equipment.

C. Provide services of control manufacturer to supervise related work done under other Paragraphs of this Section.

1. Installation of automatic valves, separable wells and duct humidifiers furnished under this Paragraph.
2. Provision of auxiliary contacts with buttons, switches and indicator lights in required configurations, on magnetic starters.
3. Provision of blank off plates (safing) for dampers that are smaller than duct size.
4. Provision of access doors for service to control equipment.

D. Electric Wiring:

1. Electric wiring and wiring connections required for installation of temperature control system, as herein specified, shall be provided by temperature control manufacturer, unless otherwise indicated on Drawings.
2. Wiring shall comply with requirements of Electrical Section.
3. If a fireman's override panel (FOP) is provided with the fire alarm system provided under the electrical section, all control wiring between FOP, motor starters and controlled devices shall be under the work of this section. This includes wiring of the pilot lights at the FOP.
4. Provide all control wiring between float switches, provided under Section 260001 ELECTRICAL WORK, in the emergency generators day tank, and the fuel oil pump set.

E. Instruction and Adjustment: Upon completion of project, temperature control manufacturer shall:

1. Completely adjust and ready for use: thermostats, controllers, valves, damper operators, relays, and other components and equipment provided under this paragraph.
2. Furnish three instruction manuals covering function and operation of

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control systems on project for use by User Agency's operating personnel.
Competent technician shall be provided for instruction purposes.

F. Programmed Maintenance:

1. Upon completion of installation, temperature control manufacturer shall submit to DMH a proposal to provide necessary programmed maintenance and to keep various control systems in proper working condition after the guarantee period.
2. Programmed maintenance agreement shall fully describe maintenance work to be performed and shall advise cost of work for subsequent years after guarantee period. This programmed maintenance proposal shall be provided free of charge at the completion of the guarantee period.

G. Room Type Instruments:

1. Existing thermostats shall remain.

H. Miscellaneous Devices: Provide relays, positioners, electric switches, clocks, transformers, etc. necessary to make complete and operable system. Locate these devices on local panel unless specified otherwise. Time clocks shall be seven-day program type with ten hour spring reserve and manual override.

2.10 SEQUENCE OF OPERATION

- A. The new fan coil unit shall be tied into the existing control valves and thermostat.
- B. The existing finned tube radiation shall be tied into the existing wall mounted thermostats. The existing control valve shall open on a call for heat.
- C. Fan Coil Unit: The FCU shall be controlled by the existing 7 day/24 hour heating and cooling programmable wall mounted thermostat. The occupied and unoccupied cycles of operation shall be determined for the unit by the thermostat. Provide all control wiring
 1. Occupied Cycle: The supply fan shall operate continuously. On a call for cooling, unit's chilled water control valve shall open to maintain the space cooling setpoint. On a call for heat, the heating coil hot water control valve shall modulate to maintain space heating setpoint. The OA damper shall open to the minimum position to supply the specified minimum ventilation air.
 2. Unoccupied Cycle: During the cooling cycle, the units shall be off. During the heating season, the unit and heating coil hot water valve shall modulate to maintain unoccupied space temperature setpoint. Outside air dampers shall be closed.

PART 3 - EXECUTION

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3.1 COMMISSIONING OF EQUIPMENT AND SYSTEMS

- A. The Designer will check the completed installation either sequentially as different parts are completed, or when the entire installation is complete, at the sole option of the Designer.
- B. Prior to the Designer's checking a part of the installation or the entire installation, this contractor shall submit a letter signed by an officer of this contracting company or an officer of the Construction Manager stating that:
 - 1. he is an officer of the company,
 - 2. he has personally inspected the installation to be checked,
 - 3. the date of his inspection,
 - 4. the installation is complete and tested and ready to be inspected by the Designer, and that all required test reports have been submitted.
- C. This contractor shall arrange that an officer of this contracting company or of the Construction Manager, as well as DMH's Project Engineer, in addition to other test witnesses that may be specified, shall witness the below listed tests. At the conclusion of each such test this contractor shall submit a letter signed by the officer stating that:
 - 1. he is an officer of the company,
 - 2. he has personally witnessed the test (give the name of the test),
 - 3. the date of testing,
 - 4. the results of testing, as compared to specified performance,
 - 5. listing the name, title, and company affiliation of all those witnessing the test.
- D. Tests Requiring Letters:
 - Electrical: Fire alarm
Emergency Lighting and Power Distribution Fire
Department Control Center
 - HVAC: Air handler operation and controls

3.2 SPECIAL RESPONSIBILITIES

- A. Coordination: Cooperate and coordinate with work of other Sections in executing work of this Section.
 - 1. Perform work such that progress of entire project including work of other Sections shall not be interfered with or delayed.
 - 2. Provide information as requested on items furnished under this Section

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- which shall be installed under other Sections.
3. Obtain detailed installation information from manufacturers of equipment provided under this Section.
 4. Obtain final roughing dimensions or other information as needed for complete installation of items furnished under other Sections.
 5. Keep fully informed as to shape, size and position of openings required for material or equipment to be provided under this and other Sections. Give full information so that openings required by work of this Section may be coordinated with other work and other openings and may be provided for in advance. In case of failure to provide sufficient information in proper time, provide cutting and patching or have same done, at own expense and to full satisfaction of Designer.
 6. Provide information as requested as to sizes, number and locations of concrete housekeeping pads necessary for floor mounted vibrating and rotating equipment provided under this Section.
 7. Notify Designer of location and extent of existing piping, ductwork and equipment that interferes with new construction. In coordination with and with approval of Designer, relocate piping, ductwork and equipment to permit new work to be provided as required by Contract Documents. Remove non functioning and abandoned piping, ductwork and equipment as directed by Designer. Dispose of or store items as requested by Designer.
- B. Maintenance of equipment and systems: Maintain HVAC equipment and systems until Final Acceptance. Ensure adequate protection of equipment and material during delivery, storage, installation and shutdown and during delays pending final test of systems and equipment because of seasonal conditions. Do not use boilers before providing water treatment where required; this includes use of boilers for temporary heat or for testing.
- C. Use of premises: Use of premises shall be restricted as directed by Designer and as required below.
1. Remove and dispose of dirt and debris, and keep premises reasonably clean. Upon completion of work, remove equipment and unused material. Put building and premises in neat and clean condition, and do cleaning and washing required to provide acceptable appearance and operation of equipment, to satisfaction of Designer and as specified under CLEANING paragraph.
 2. It shall be this trade's responsibility to store his materials in a manner that will maintain an orderly clean appearance. If stored on site in open or unprotected areas, all equipment and material shall be kept off the ground by means of pallets or racks, and covered with tarpaulins.
 3. Do not interfere with function of existing sewers and water and gas mains. Extreme care shall be observed to prevent debris from entering ductwork. Confer with Designer as to disruption of heating services or other utilities due to testing or connection of new work to existing. Interruption of heating services shall be performed at time of day or night deemed by Designer to

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provide minimal interference with normal operation. Obtain Designer 's approval of the method proposed for minimizing service interruption.

D. Surveys and measurements:

1. Base measurements, both horizontal and vertical, on reference points established by Contractor and be responsible for correct laying out of work.
2. In event of discrepancy between actual measurements and those indicated, notify Designer in writing and do not proceed with work until written instructions have been issued by Designer.

E. Fireproofing:

1. Clips, hangers, clamps, supports and other attachments to surfaces to be fireproofed shall be installed, insofar as possible, prior to start of spray fiber work.
2. Ducts, piping and other items which would interfere with proper application of fireproofing shall be installed after completion of spray fiber work.
3. Patching and repairing of spray fireproofing due to cutting or damaging to fireproofing during course of work specified under this Section shall be performed by installer of fireproofing and paid for by trade responsible for damage and shall not constitute grounds for an extra to DMH.

F. Airbound Coils

1. If, after plant is in operation, any coils or other apparatus are stratified or air bound (by vacuum or pressure), they shall be repiped with new approved and necessary fittings, air vents, or vacuum breakers at no extra cost. If connections are concealed in furring, floors, or ceilings, this trade shall bear all expenses of tearing up and refinishing construction and finish, leaving same in as good condition as before it was disturbed.

3.3 MATERIALS AND WORKMANSHIP

- A. Work shall be neat and rectilinear. Ductwork and piping shall run concealed except in mechanical rooms and areas where no hung ceiling exists. Install material and equipment as required by manufacturers. Installation shall operate safely and without leakage, undue wear, noise, vibration, corrosion or water hammer. Work shall be properly and effectively protected, and pipe and duct openings shall be temporarily closed to prevent obstruction and damage before completion.
- B. Except as specified otherwise, material and equipment shall be new. Provide supplies, appliances and connections necessary for complete and operational installation. Provide components required or recommended by OSHA and

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applicable NFPA documents.

- C. References to manufacturers and to catalog designation, are intended to establish standards of quality for materials and performance but imply no further limitation of competitive bidding.
- D. Finish of materials, components and equipment shall be as approved by Designer and shall be resistant to corrosion and weather as necessary.
- E. DMH will not be responsible for material and equipment before testing and acceptance.

3.4 CONTINUITY OF SERVICES

- A. Do not interrupt existing services without the DMH Project Engineer's approval.
- B. Schedule interruptions in advance, according to the DMH Project Engineer's instructions. Submit, in writing, with request for interruption, methods proposed to minimize length of interruption.
- C. Interruptions shall be scheduled at such times of day and work so that they have minimal impact on the User Agency's operations.

3.5 TAGS

- A. Upon completion of work, attach engraved laminated tags to all valves (listed in the valve directory called for in the "Bulletins, Manuals and Instructions" paragraph of these specifications) and all pieces of HVAC equipment (including but not limited to pumps, fans, air handlers, coils and all other equipment listed in the HVAC schedules). Valve tags shall have black characters on white face, consecutively numbered and prefixed by letter "V". Equipment tags shall have black characters on white face, with labels corresponding to drawing schedule numbers.
- B. Embossed or engraved aluminum or brass tags may be substituted if desired. Tags shall be at least 1/8" thick.
- C. Valve tags shall be at least 1" in diameter with numerals at least 3/8" high and attached by "S" hooks or chains. Equipment tags shall be at least 2" diameter securely attached to apparatus.
- D. Provide manufacturers equipment nameplates, catalog numbers and rating identification securely attached to electrical and mechanical equipment with screws or rivets. Adhesives or cements will not be permitted.

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3.6 PIPE AND DUCT IDENTIFICATION

- A. Ductwork shall be stenciled at each junction or branch takeoff, at least once in each room, and at intervals not longer than 20 ft. Stencil shall clearly identify duct service (S for supply, R for return, X for exhaust), area served by branch, and arrow indicating direction of flow.
- B. Provide color coded pipe identification markers on piping installed under this Section. Pipe markers shall be snap on laminated plastic protected by clear acrylic coating. Pipe markers shall be applied after architectural painting where such is required.
- C. Provide arrow marker with each pipe content marker to indicate direction of flow. If flow can be in either direction, use double headed arrow marker.
- D. Mains shall be labeled at points of entrance and exit from mechanical room, adjacent to each valve, on each riser, at each tee fitting, at points of entrance and exit from building, at least once in each room, and at intervals no longer than 20 ft.
- E. Size of legend letters on markers and length of color field shall be per the latest edition of ANSI A13.1.
- F. Markers shall be "Setmark" by Seton Name Plate Corp. or approved equal.
- G. Following color coding shall be used with names in black letters on background and white letters on green background.

Service	Legend	Background Color
Hot water supply	HWS	Yellow
Hot water return	HWR	Yellow
Cold water	CW	Green

- H. Color banding shall meet latest edition of ANSI A13.1 and OSHA.

3.7 PENETRATIONS AND SLEEVES

- A. General
 - 1. Provide pipe and duct sleeves and packing materials as specified and as shown on Drawings at penetrations of foundations, walls, slabs (except on grade), partitions and floors. Sleeves shall meet NFPA 101 requirements and materials requirements of Part 2 of this Section.
 - 2. Coordinate work carefully with architectural and structural work. Set

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sleeves in forms before concrete is poured. Provide core drilling as necessary if walls are poured, or otherwise constructed, without sleeves and a wall penetration is required. Provide core drilling as required for penetrations of existing construction. Do not penetrate structural members without Designer's approval.

3. Sleeves for insulated pipe and duct in non fire rated construction shall accommodate continuous insulation without compression. Sleeves and/or penetrations in fire rated construction shall be packed with fire rated material which shall maintain the fire rating of the wall. Seal ends of penetrations to provide continuous vapor barrier where insulation is interrupted. See Part Two of these specifications for requirements for packing materials.
4. Sleeves through floors shall be water tight and shall extend 2" above floor surface.

B. Pipe Sleeves

1. Annular space between pipe and sleeve shall be at least 1/4".
2. Sleeves are not required for slabs on grade unless specified otherwise.
3. Sleeves and packing materials, through rated fire walls and smoke partitions shall maintain fire rating of construction penetrated.
4. Do not support piping risers on sleeves.

C. Duct Sleeves and Prepared Openings

1. Provide duct sleeves for round ducts 15" and smaller; provide prepared, framed openings for round ducts larger than 15" and for square, rectangular and flat oval ducts, except as specified otherwise. Sleeves shall meet SMACNA requirements.
2. Provide sleeves for ducts through 1, 2 or 3 hour fire rated construction and smoke partitions, regardless of size and shape of ducts. Sleeves shall maintain fire rating of construction penetrated. Sleeve and seal materials, construction and clearances shall meet requirements of SMACNA Fire Damper and Heat Stop Guide for Air Handling Systems.
3. Prepared openings shall be framed to provide 1" clearance between framing and duct or duct insulation.

D. Installation Testing, Listings and Approvals

1. Installation shall meet material manufacturer's recommendations exactly, particularly as regards safety, ventilation, removal of foreign materials and other details of installation. Dam openings as recommended. Remove flammable materials used for damming and forming seals in fire rated construction.
2. Sleeve penetration methods shall be water and gas tight and shall meet requirements of ASTM E 119 Standard Methods of Fire Tests of Building Construction and Materials.

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3. Fire stop penetration seal methods and materials shall be FM approved and UL listed as applicable.
4. Inspect foamed sealants to ensure manufacturer's optimum cell structure and color ranges.

3.8 ANCHORS AND INSERTS

- A. Inserts shall be iron or steel of type to receive machine bolt head or nut after installation. Inserts shall permit adjustment of bolt in one horizontal direction and shall develop strength of bolt when installed in properly cured concrete.
- B. Provide anchors as necessary for attachment of equipment supports and hangars.

3.9 INSTALLATION OF EQUIPMENT

- A. Avoid interference with structure and with work of other trades, preserving adequate headroom and clearing doors and passageways, to satisfaction of Designer and in accordance with code requirements. Installation shall permit clearance for access to equipment for repair, servicing and replacement.
- B. Install equipment so as to properly distribute equipment loads on building structural members provided for equipment support under other Sections. Roof mounted equipment shall be installed and supported on structural steel provided under other Sections.
- C. Provide suspended platforms, strap hangers, brackets, shelves, stands or legs as necessary for floor, wall or ceiling mounting of equipment provided under this Section (e.g. heating and ventilating units, fans, ducts and piping) as indicated on Drawings and in Specifications.
- D. Provide steel supports and hardware for proper installation of hangers, anchors, guides, etc.
- E. Provide cuts, weights, and other pertinent data required for proper coordination of equipment support provisions and installation.
- F. Structural steel and hardware shall conform to Standard Specifications of ASTM; use of steel and hardware shall conform to requirements of Section Five of Code of Practice of American Institute of Steel Construction.
- G. Verify site conditions and dimensions of equipment to ensure access for proper installation of equipment without disassembly which will void warrantee. Report in writing to Designer, prior to purchase or shipment of equipment involved, on conditions which may prevent proper installation.

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3.10 PAINTING

- A. Equipment installed under this Section shall have shop coat of non lead gray paint. Hangers and supports shall have one coat of non lead red primer. Machinery such as pumps, fans, etc., shall be stenciled with equipment name. Stencil shall be at least 6" high for large equipment, 2" high for small equipment. Finish painting, including painting of various piping and duct systems, shall be done under other Sections.
- B. Note requirement for Designer 's approval invoked under Part 3 article, MATERIALS AND WORKMANSHIP regarding finish of material and equipment which are visible or subject to corrosive or atmospheric conditions.

3.11 CLEANING

- A. Ductwork
 - 1. New and existing ducts within 4' of the existing fan coil unit shall be thoroughly cleaned so that no dirt or dust shall be discharged from diffusers, registers or grilles, when system is operated.
 - 2. Provide temporary connections required for cleaning. Provide cheesecloth for openings during cleaning.
 - 3. Replace filters in the NEW FCU ONLY prior to final inspection and testing.
- B. Piping
 - 1. Furnish pipe cleaning chemicals, chemical feed equipment, materials and labor necessary to clean piping.
 - 2. Permanently install necessary chemical injection fittings complete with stop valves.
 - 3. After chilled water, heating hot water, condenser water, steam and condensate piping have been pressure tested and approved for tightness, clean and flush piping specified under WATER TREATMENT Paragraph.
 - 4. Maintain continuous blowdown and make up, as required during flushing operation.
- C. Equipment
 - 1. After completion of project, clean the exterior surface of equipment included in this section, including concrete residue.

3.12 STARTUP, TESTING AND BALANCING

- A. General

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1. Provide qualified personnel, equipment, apparatus and services for start up, testing and balancing of mechanical systems, to performance data shown in schedules, as specified, and as required by codes, standards, regulations and authorities having jurisdiction including City Inspectors, DMH's Project Engineer and Designer. Note that some ATC start up procedures listed below require the cooperation of the balancing contractor and the rooftop unit manufacturer's representative (if rooftop units are involved) and some balancing procedures require the cooperation of the ATC contractor and the rooftop units manufacturer representative (if appropriate). Ensure that all contractors are present on site during the entire time that these procedures take place. Note that some procedures listed below have a distinct order of precedence, e.g., the testing of the temperature control system shall not occur until major pieces of mechanical equipment have been started up and testing is complete. Ensure that any listed orders of precedence for procedures are followed.
2. Startup, testing and balancing shall not diminish guarantee requirements.
3. Notify Designer and authorities involved at least two weeks before startup testing and balancing begins.
4. Before temperature control testing begins a meeting shall be held between the HVAC engineer, the balancing contractor, the automatic temperature control contractor and the mechanical contractor. The mechanical contractor shall present the HVAC engineer with the completed checklists (contained in this specification) certifying that equipment startup and testing has been completed. The temperature control contractor shall then present his procedures for testing the ATC system to the HVAC engineer for review and approval. Allow one full day for this meeting.
5. When the temperature control testing has been completed a second meeting shall be held. At this time the temperature control contractor shall present the HVAC engineer with the completed controls startup checklist (contained in this specification). The balancing contractor shall present HVAC engineer with certificates of calibration for balancing instruments, proposed balancing forms and proposed balancing procedures to the HVAC engineer, for review and approval. Allow one full day for this meeting.
6. If, through no fault of the Designer, the above two meetings do not take place and the temperature control startup and balancing proceeds the following shall occur.
 - a. All balancing reports shall be rejected.
 - b. The contractors requisition for monies covering the ENTIRE portion of the testing and balancing work will be rejected. Others will be hired to complete the work. These requirements shall be strictly enforced.
7. Do not cover or conceal work before testing and inspection and obtaining approval.
8. Instruments for testing and balancing shall have been calibrated within one month prior to testing and balancing. Calibration shall be traceable to NBS

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Standards. Provide Photostat of certificate of calibration to Designer 's representative at meeting demonstrating balancing procedures mentioned in Paragraph 4 above.

9. Leaks, damage and defects discovered or resulting from startup, testing and balancing shall be repaired or replaced to like new condition with acceptable materials. Tests shall be continued until system operates without adjustments or repairs.
10. Report on reporting forms, submitted to Designer for approval in advance, and on forms provided by Designer.
11. For each piece of equipment, copy nameplate data and include in report.
12. Submit six copies of testing and balancing reports to Designer for approval.
13. Provide capacity and performance of equipment by field testing. Install equipment and instruments required for testing, thermo wells and gauge connections at no additional cost to DMH.
14. Qualified representative of equipment manufacturer shall be present at test.
15. Startup, testing and balancing procedures outlined below are the minimum effort required for the project. Contractor shall use any additional procedures he feels will be necessary to properly startup, test and balance the job.

B. Equipment Startup

1. Start up the following pieces of equipment in strict accordance with manufacturer instructions and with manufacturer's representative present:
 - a. Air handlers
 - b. Ductless Split Systems
 - c. Complete the following checklist to certify to the Designer that startup of the above pieces of equipment has successfully been accomplished. Copy multiple checklists as required. Edit inappropriate items as required.

EQUIPMENT LIST	DATE CONFIRMED	MANUFACTURERS REPRESENTATIVE NAME AND SIGNATURE	CONSTRUCTION MANAGER REPRESENTATIVE NAME AND SIGNATURE
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Fan Coil Unit
FCU-35

C. Automatic Temperature Controls Testing

1. Temperature Control Testing General Requirements
 - a. Start up temperature control system so that all sequences of operation

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called for in Designer's drawings and specifications operate properly. Ensure that all control components are properly calibrated in accordance with manufacturers instructions. See that all software, included with control system, is fully debugged. Air and Water Balancing

2. General

- a. Provide qualified personnel, equipment and services for balancing and adjusting of mechanical systems. Submit resumes at demonstration of balancing meeting.
- b. Personnel shall be experienced and qualified to perform, record, and evaluate all procedures contained here and/or as outlined on drawings.
- c. For each air handler on job, provide, under the work of the mechanical section, one spare sheave of size to be determined after traverses are complete.
- d. Submit procedures, recording forms, and test equipment for review prior to balancing, as described in Paragraph A.4 above.
 - 1) Balancing procedure or sequence is contained herein.
 - 2) Recording forms used for balancing must be submitted to Designer for approval before balancing is started.
 - a) Failure to submit forms will result in rejection of entire submittal.
 - b) Submit description of balancing equipment being used.
 - 3) Balancing shall not begin until system has been installed complete and capable of normal operation.
 - a) All grilles, dampers, fans, coils, pumps, valves and linkages shall be installed and operating prior to balancing.
 - b) System shall be capable of operating under control as specified on drawings and/or contained herein.

3. Air System Balancing

- a. Testing agency shall balance, adjust and test motors, systems, air moving equipment and distribution, supply, return and exhaust systems, as follows:
 - 1) Adjust blower rpm to design requirements and record. Test and record motor full load amperes.
 - 2) Make pitot tube traverse of main supply, return and exhaust and obtain design cfm at fans.
 - 3) Test and record system static pressure, suction and discharge.
 - 4) Test and record entering air temperatures.
 - 5) Balance and adjust supply air systems in finished areas of building:
 - a) Balance and adjust as required to deliver volume of air at each air outlet within 10% of design flow shown on Drawings.
 - b) Readjust air volumes after occupancy, as required to

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- properly balance heating and cooling loads throughout conditioned areas.
 - 6) Balance supply air systems in unfinished areas:
 - a) Supply air systems shall be balanced after installation of items related to same systems with exception of duct taps to air diffusers in interior zones.
 - b) Balance as required to deliver air volume at outlets within 10% of design flow shown on Drawings.
 - c) Provide sufficient temporary openings in interior zone duct systems to adjust interior zone air volumes.
 - d) Readjust air volumes after completion and occupancy, as required to properly balance heating and cooling loads throughout conditioned areas.
 - b. Compile test data and submit to Designer for approval.
 - c. If questions arise, tests or portions of tests shall be repeated in presence of Designer.
- 4. Air System Balancing NEW FAN COIL UNITS ONLY:
 - a. Visually inspect all fire, smoke and volume dampers on branch take offs to each floor to ensure that they are fully open.
 - b. Verify with straight edge that fan and motor shafts are parallel and that sheaves are in proper alignment. Use Browning belt tensioner to confirm belts are at proper tension. Refer to deflection tables appropriate for installed belts.
 - c. Start fans, verify that fan rotation is correct. If not, coordinate with electrical contractor to switch power leads such that the fan rotates correctly.
 - d. Verify that fan belts are tight on one side and have slight bow on other side when fan is operating with no excessive squeal at startup. If not correct, adjust sheaves or motor base accordingly.
 - e. Check nameplate voltage on motor, compare to scheduled voltage. Notify Designer immediately of any discrepancies. Measure and record actual voltage across all power leads. Notify Designer of discrepancies immediately.
 - f. Check motor nameplates full load amps, measure and record amperage across all power leads. If there are marked discrepancies in amperage draws between legs, notify Designer immediately.
 - g. Measure and record fan and motor rpm. Check that motor rpm agrees with nameplate and scheduled rpm.
 - h. Perform static pressure profile as follows: Record all results and submit to Designer.
 - 1) Determine static pressure across supply and return fans as follows:
 - a) Measure static or total pressure at fan suction.
 - b) Measure static pressure at fan discharge.
 - c) Differential is total static pressure developed by fan.
 - 2) Determine static pressure:
 - a) In discharge ductwork after AHU smoke damper.

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- b) Across each filter section.
 - c) Across each coil.
 - d) Across fire and volume dampers at branch take offs to each floor.
 - e) At up to 25 points, in system shown on drawings or to be selected by Designer to be determined when ductwork shop drawings are approved.
- 3) Determine the correct causes of any excessively high readings, i.e. open throttled dampers, clean dirty coils, etc. Cover all holes when measurements are complete.
- i. Add 1/2" of static pressure to the system, to simulate the effect of dirty filters. Static may be added by throttling branch volume dampers, blanking off portions of the filter section, covering filter section with cheesecloth or other suitable means. Confirm 1/2" static has been added with new static pressure reading across fan. Open dampers, remove cheesecloth, etc. after traverses are complete.
 - j. Perform pitot tube traverse of supply ducts downstream from AHU discharges and return ducts. Summing CFM totals from diffusers is not an acceptable method of determining total airflow from AHU's. At Designer's request, show Designer holes where traverses were taken. Perform traverses in accordance with procedures outlined in latest edition of the SMACNA HVAC Testing. Adjusting and Balancing Manual, except that if recommended lengths of straight duct before and after traverse points are not available, increase number of measuring points by 50%. If a 24 point traverse would be called for given the duct cross section area measure 36 points, for example.
 - k. Measure amperage at each power leg after traverse is complete. If an overload condition exists with measured CFM equal to scheduled CFM, notify Designer immediately.
 - l. Balance the total supply air, return air and outdoor air at the NEW FAN COIL UNITS ONLY to within 10% of scheduled values. Follow procedures in SMACNA manual referenced above.
 - m. For constant volume systems, perform pitot tube traverses for branch ducts on each floor. Adjust volume dampers to produce design CFM for each branch.
 - n. Balance supply air systems in unfinished areas:
 - 1) Supply air systems shall be balanced after installation of items related to same systems with exception of duct taps to air diffusers in interior zones.
 - 2) Balance as required to deliver air volume at outlets within 10% of design flow shown on Drawings.
 - 3) Provide sufficient temporary openings in interior zone duct systems to adjust interior zone air volumes.
 - 4) Readjust air volumes after completion and occupancy, as required to properly balance heating and cooling loads throughout conditioned areas.

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5. Water Balancing and Adjusting
 - a. Balancing shall not begin until systems have been installed complete, including pumps, piping, valves and coils.
 - b. Make adjustments as required to deliver water volumes at the NEW FAN COIL UNITS ONLY within 5% of design flow, or as required to properly balance cooling and heating loads throughout conditioned areas.
 - c. Adjustments in water volumes shall be made in manner satisfactory to Designer.
 - d. Report on system performance shall include:
 - 1) Manufacturer, size, type, location including room number, and zone of each coil and piece of equipment.
 - 2) Design and actual water flow.
 - 3) Complete nameplate data for each piece of equipment reported.
 - 4) Complete identification of data.

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

SECTION 260500

ELECTRICAL

PART 1 -GENERAL

- A. The Conditions of the Contract and other sections of Division 1, General Requirements, apply to work of this Section.

1-02 WORK TO BE PERFORMED

- A. The scope of work under this Section, without limiting the generality thereof, includes the furnishing of all labor, materials, equipment, services and incidentals necessary to complete all of the Work in accordance with the Contract Documents which are intended to describe and provide for a finished piece of Work, and are to be cooperative; what is called for by either shall be complete in every detail, notwithstanding whether or not every item necessarily involved is particularly mentioned.
- B. Electrical Work shall generally consist of, but not be limited to:
1. Obtain all permits and inspections and pay all fees;
 2. Selective demolition of items as noted or shown;
 3. Careful removal, storage, protection and re-installation of items as shown;
 4. Provide all wire and cable, connectors and connections;
 5. Provide all raceways, fittings and supports;
 6. Provide all wiring devices and plates;
 7. Provide all lighting fixtures and lamps as scheduled or specified;
 8. Testing, training, commissioning and demonstration of all systems;
 9. Record Drawings;
 10. Warranty.
- C. All permit and inspection fees for the work of this section shall be paid for by this Contractor.
- D. Restore to match surrounding surfaces any area disturbed or exposed by the Work of this section.
- E. Perform work and provide material and equipment as shown on Drawings and as specified or indicated in this Section of the Specifications. Completely coordinate

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work of this Section with work of others and provide a complete and fully functional installation. Drawings and Specifications form complimentary requirements; provide work specified and not shown, and work shown and not specified as though explicitly required by both. Although work is not specifically shown or specified, provide supplementary or miscellaneous items, appurtenances, devices and materials obviously necessary for a sound, secure and complete installation. Remove all debris caused by this Contractor's work.

- F. Drawings are diagrammatic and indicate general arrangement of systems and work included in Contract. It is not intended to specify or to show every offset, fitting or component; however, Contract Documents require components and materials whether or not indicated or specified as necessary to make the installation complete and operational.
- G. Wiring shall be routed as required to minimize cutting and patching required. Devices shall be located to comply with code required locations, and to avoid field obstructions, and to comply generally with locations as shown on the drawings. The location of devices and related work within 10 feet of location shown on plans shall be included in the contract price.
- H. As work progresses and for duration of Contract, maintain complete and separate set of prints of Contract Drawings at job site at all times. Record work completed and all changes from original Contract Drawings clearly and accurately, including work installed as a modification or addition to the original design. Indicate actual circuiting, light fixture locations, device outlet locations, switch assignments, loadcenter schedule, etc.

1-03 RELATED WORK SPECIFIED UNDER OTHER SECTIONS

- A. The following items of work are specified and included under other sections of the specifications:
 - 1. Section 23.00.01 HVAC
- B. Painting of electrical conduits, pull boxes, hangers, panelboard doors and trim, and all other electrical equipment, to match the surrounding finish as directed by the Architect, shall be done by the General Contractor or Painting Subcontractor.
- C. All electric motors shall be furnished and set in place by the trade requiring same and shall be wired by this Contractor.
- D. All control devices including starters, thermostats, pneumatic-electric switches, electric-pneumatic switches, aquastats and alternators required for the automatic temperature control system shall be furnished and installed under the Heating, Ventilating and Air Conditioning Section of the Specifications unless otherwise indicated on the electrical drawings.

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- E. All automatic temperature control wiring and raceways, including wiring all control devices shall be provided under the Heating, Ventilating and Air Conditioning Section of the Specifications unless otherwise indicated on the electrical drawings.
- F. All temporary power shall be provided by the General Contractor.
- G. All removal and disposal of demolished electrical items shall be provided by the General Contractor.
- H. All cutting and patching required for the electrical work shall be provided by the General Contractor.

1-04 SUBMITTALS

- A. Submit shop drawings and manufacturer's product data in accordance with the provisions of the General Conditions. Submit quantity of copies as requested.
- B. List of material and equipment requiring shop drawings shall include, but is not limited to:
 - 1. Wire and Cable (if required)
 - 2. Wire and Cable Connectors and Devices
 - 3. Raceways and Fittings (if required)
 - 4. Wiring Devices and Device Plates
 - 5. Lighting Fixtures
- C. Submittals shall be indexed from list above. Add additional items to end of list. Check, stamp and mark with project name shop drawings and product data before submitting for approval. Specifically indicate on shop drawing transmittal form or by separate letter any deviations from Contract Documents because of standard shop practice or other reason.
- D. Cross out, but do not obliterate, material not intended for inclusion in the Work. Clearly indicate material to be included in the Work.
- E. Submit for approval all materials incorporated in the Work. Installation of material which is not approved shall be at the risk of this Contractor, and the Owner may order that it be removed and/or replaced.
- F. Submit samples of any material or equipment requested, prior to approval.
- G. The Engineer will review one initial submittal, and one re-submittal of any item. If review, of re-submittals beyond the first re-submittal are required; this Contractor

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shall bear the Engineer's cost to review the re-submittal. If materials which have previously been approved or approved-as-noted are re-submitted, this Contractor shall bear the Engineer's cost to review the re-submittal.

1-05 CODES, ORDINANCES AND PERMITS

- A. All Work shall be done in strict accordance with the Codes, rules and regulations governing electrical work in the city of Taunton, and the Commonwealth of Massachusetts, and the Massachusetts Electrical Code. If there is any conflict between plans or specifications and such rules and regulations, the rules and regulations shall take precedence.
- B. The publications and/or standards listed below form a part of this specification. The publications are referenced in text by the basic designation only.
 - 1. National Fire Protection Association (NFPA) - USA:
 - a. No. 70 National Electrical Code (NEC)
 - b. No. 72 National Fire Alarm and Signaling Code
 - c. No. 241 Standard for Safeguarding Construction, Alteration, and Demolition Operations
 - 2. Commonwealth of Massachusetts
 - a. 527 CMR 12.00 Massachusetts Electrical Code
 - b. 780 CMR Massachusetts State Building Code, 9th Edition and it's reference standards
 - c. 521 CMR Massachusetts Regulations of the Architectural Access Board
- C. Perform work strictly as required by rules, regulations, standards, codes, ordinances, and laws of local, state, and federal government, and other authorities that have lawful jurisdiction.
- D. Give notices, file plans, obtain permits and licenses, pay all fees and obtain all necessary approvals from authorities that have jurisdiction. Coordinate with General Contractor for submission of, and/or prepare and submit, an NFPA 241 plan as required by the AHJ. Deliver all certificates of inspection to the Architect. No work shall be covered before examination and approval by the Authority Having Jurisdiction. Replace any imperfect or condemned work with materials conforming to the requirements, and satisfactory to the Architect, without extra cost to the Owner. This Contractor is responsible to obtain all permits and pay all fees related to work of this section.
- E. Where the Engineer is to witness testing or perform inspections of work, provide not less than seven (7) calendar days notice to the Engineer of such inspections or testing. At or before request for completion inspection, provide completed as-built plans for

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review by the Engineer at the final inspection.

- F. Where the local Authority Having Jurisdiction (AHJ) requires work which is not included in the Contract, and where such work will result in an added cost to the Owner, this Contractor shall obtain such requirement from the AHJ in writing. Such requirements shall be supported by applicable code, ordinance or law citation(s), or other justification, to the full satisfaction of the Owner.

1-06 INSPECTION OF SITE

- A. Prior to submitting a bid, the bidder is advised to with prior arrangement with the Owner, visit the site (See Advertisement for site date) and shall at that time, inspect all existing conditions to ascertain the exact scope and nature of the work that is required under this Contract, how it relates to existing work to remain and all job conditions and restrictions.
- B. Bidders are advised to visit the site and inform themselves as to conditions under which this work will be performed, prior to submitting prices. Failure to do so will, in no way relieve the successful bidder from the responsibility of furnishing any materials or performing any work in accordance with the true intent of the Drawings and Specifications.
- C. No claim for extra compensation will be recognized if difficulties are encountered which an examination of the site conditions, Drawings and Specifications prior to executing the Contract would have revealed.

1-07 STORAGE AND REMOVAL OF MATERIALS

- A. Provide suitable containers on-site for storage of materials, or store material off-site. Type and location of containers shall be subject to the approval of the Engineer.
- B. The General Contractor shall provide suitable containers for all demolition and waste materials generated by this work.

1-08 CHANGES IN THE WORK

- A. Any addition, deletion or change in the work which affects the contract sum will be addressed via a change order. This Contractor may be noticed to proceed with the work while the change order paperwork is being processed via a bulletin, construction change directive, or other document.
- B. In addition to any requirements listed in other sections of the contract, any proposals shall be fully supported by documentation of costs, including material quantities and unit costs, labor units, labor rates and any mark-ups in accordance with the contract. Any sub-contractor or vendor proposals shall be similarly detailed. Material unit costs

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shall be based on the proposer's actual costs, which shall be documented by vendor quotes, invoices or other upon request. Material prices from estimating or pricing guides will not be accepted. Material prices which are in excess of the retail costs of materials in the area will not be accepted.

- C. Any change order proposal shall also state the impact, if any, on the contract duration. If no such statement is made, the contract duration will remain unchanged.
- D. The proposer shall bear the costs associated with reviewing, documenting and processing any change orders which are the result of a failure to properly carry out the work, or other proposals which are 1) not requested by the Owner, Architect or Engineer, or 2) are not the result of differing conditions.
- E. Where the work is under construction control, any change to the work deviating from the approved construction documents must be submitted to and approved by the engineer in advance via a request for information (RFI). The reason(s) for the change must be clearly stated, such as field interference, AHJ request, convenience, etc. Unapproved changes will prevent the issuance of a Final Construction Control Document, acceptance of the work, and payment for unapproved work. The Engineer's costs for addressing RFIs as a result of proposed changes which are for the convenience of this Contractor shall be paid for by this Contractor. Regardless of the reason, approved changes shall be marked on the as-built drawings by this Contractor.

1-09 SAFETY

- A. The General Contractor and this Contractor shall be jointly responsible for all safety on the Project. This shall include safety to the workers, occupants, the engineer and owner and their respective employees. The General Contractor shall develop and implement all safety programs required by mandated and industry standard regulations.

PART 2 – PRODUCTS

2-01 GENERAL

- A. Products furnished shall be designed and approved for the intended use, shall meet all requirements of the Massachusetts Electrical Code (MEC), and local codes, shall be manufactured in accordance with the standard indicated, and shall meet the requirements specified in the Contract Documents. Materials and equipment shall be listed by a nationally recognized testing laboratory.
- B. All material incorporated in the Work shall be new and unused. Samples of any material or item shall be furnished upon request of the Engineer, prior to approval.
- C. All products shall be rated for and approved for use in the application shown,

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regardless of any notations on the plans. All equipment shall be rated for the current, voltage and phases at which they are applied.

- D. It is the intent of the Specifications that one manufacturer be selected, not a combination, for any particular classification of material. For example, all wire of one manufacturer, all switches of one manufacturer, etc.
- E. Where materials, equipment, apparatus, or other products are specified by manufacturer, brand name, type or catalog number, such designation is to establish standards of performance, quality, type and style.
- F. This Contractor shall be responsible for ordering and furnishing the correct quantity of material required. Routing and equipment arrangements shown on the drawings are approximate only and are not warranted to be accurate.
- G. Devices and equipment shall not require batteries to operate, unless expressly specified.
- H. Certain materials and equipment shall be approved for use in Hospitals, as required by NFPA 70, Article 517, regardless of whether same is specifically called out herein. Requirements are not reiterated, but are incorporated herein by reference. Refer to Article 517.
- I. All items exposed to view by or accessible to occupants shall be anti-ligature type.
- J. All hardware exposed to view or accessible to occupants shall be tamper- resistant type, to match facility standard configuration.

2-02 WIRE AND CABLE

A. General

- 1. Minimum wire size shall be No.14 AWG.
- 2. All conductors shall be annealed copper, 98% conductivity, Class B stranding, except No.10 AWG and smaller diameter may be solid.
- 3. Aluminum conductors are not allowed.
- 4. Minimum sizes shall be No. 12 AWG for power and lighting and No. 14 AWG for control.
- 5. Conductors shall be identified (colored) as required by the MEC.
- 6. Wire and cable shall be manufactured by General Cable Co., American Wire, Okonite, or approved equal.

B. NEC Type THWN/THHN: UL 83

- 1. Conductors for power, lighting, grounding and control; above grade; No. 14

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AWG through No. 8 AWG; shall be NEC type THWN/THHN.

- C. Armored cable (Type AC): Interlocking aluminum strip, green armor, full size green insulated copper grounding conductor plus armor/bond wire, UL classified for through-wall penetrations.
- D. Type NM-B Cable: shall not be used.
- E. NEC Type FPL: UL listed, 14 gauge, 2 conductor, solid with overall red jacket.

2-03 WIRE AND CABLE CONNECTORS AND DEVICES

- A. Wire and Cable Connectors and Devices: UL 486.
- B. Ground conductors of # 14, 12 and 10 AWG shall be made up using only green wire nuts with grounding pigtail provisions.

2-04 RACEWAYS

- A. Electrical Metallic Tubing (EMT): UL 797. Fittings – compression one inch and below, set screw over one inch. Pre-painted raceways are not acceptable.
- B. Flexible Metallic Conduit (FMC): UL 1.
- C. Liquid-tight Flexible Metallic Conduit (LFMC): UL 360. Use for connections at exterior mounted equipment, or other location exposed to weather or wet conditions.
- D. Surface Raceways: UL 5. Including a system of interlocking, two piece metal raceways, fittings and outlet boxes designed for surface mounting, as manufactured by Wiremold, Hubbell, MonoSystems, T&B or approved equal. Color as selected by Architect. Use surface metal raceway only where explicitly shown or concealed wiring methods or alternate routing of raceway/wiring is not possible, and only with the express permission of the Engineer. Only straight sections of raceway shall be used – elbows, offsets, and the like fittings are prohibited. Mounting shall be by concealed means only. Where located in patient areas, surface outlet boxes shall be anti-ligature type, as by Medical Safeguards or approved equal. Surface outlet box openings shall be carefully cut, and sealed with anti-pick caulk.
- E. Fittings for metallic raceway shall be steel. Connectors for EMT, FMC, LFMC shall have insulated throat.
- F. Steel supports or racks shall be galvanized steel channel and fittings. Supports shall be manufactured by Unistrut, Kindorf, Husky Products Company, or approved equal. Steel support rods or support bolts for conduits shall be 1/8" diameter for each inch or fraction thereof of diameter of conduit size, but no rod or bolt shall be less than 1/4" in diameter.

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- G. All required fittings, offsets and bends required shall be provided to route the conduits from source to destination, whether these are shown on the plans or not. Arrange conduits as required to avoid obstructions, and account for field conditions. Provide all supports as required by the Massachusetts Electrical Code.

2-05 WIRING DEVICES

A. Receptacles:

1. NEMA 5-20R, hospital grade, duplex.
2. All 125-volt 15 ampere and 20 ampere receptacles shall be listed as tamper resistant.
3. Color: red

B. Device Plates:

1. Device plates shall be polycarbonate, one piece, single or multi-gang, vandal/tamper resistant type, selected to match the device or combination of devices. So-called “goof” plates are not allowed. Attach with tamper- resistant hardware, facility standard. Provide Weizel Security 812-S73 or approved equal by Cortech.

- C. Wiring devices shall be manufactured by Pass & Seymour/Legrand, Hubbell or Leviton.

2-06 LIGHTING FIXTURES

- A. Provide lighting fixtures, equipment and components where shown on Drawings, and as scheduled, wired and assembled. Provide approved connectors, fittings, and other appurtenances as required.
- B. Provide all fixtures with light source as scheduled. Scheduled fixtures indicate the type, finish and quality required. Provide scheduled manufacturer, or equal by Kenall or Hubbell.
- C. LED lighting shall be designed in accordance with ANSI C78.377. Provide UL recognized LED drivers designed to UL8750 standard.
- D. LED lamps, modules and drivers shall be designed to NEMA 410 standard.
- E. Fixtures shall be complete with light source of the type noted in schedules and shall have metal parts, glassware, plastic diffusers, etc., free from scratches, cracks, and other defects. Any items damaged during shipment, handling, or installation shall be replaced without expense to the Owner.

PART 3 – EXECUTION

3.01 WORKMANSHIP

- A. Work shall be executed in workmanlike manner and shall present neat, rectilinear and mechanical appearance when completed. Maintain maximum headroom at all times. Do not run raceway exposed unless shown exposed on drawings. Material and equipment shall be new and installed according to manufacturer's recommended best practice so that completed installation shall operate safely and efficiently.
- B. This Contractor shall review installation details of all electrical equipment in public areas with the Architect and cooperate fully with the Architect in this regard. Any work installed which is not reviewed with and approved by the Architect is subject to re-work at no increase in contract price.
- C. All workmanship shall be of the highest quality, as determined by the Engineer. This Contractor will be required to repair or replace all Work which is not of the highest quality and workmanship.
- D. All equipment and components shall be installed in strict compliance with manufacturers' recommendations. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc., before beginning system installation.
- E. Conductor fasteners shall be tightened with a torque tool in good condition to factory specifications. At time of inspection, torque tool(s) shall be available to demonstrate proper torque.

3.02 DEMOLITION

- A. Demolish the existing systems to allow installation of the new systems. No components, items or materials are to be re-used, unless specifically noted herein or on the drawings. All demolition material shall become the property of the General Contractor, for his lawful disposal, except any material which the Owner may salvage. Equipment to be turned over to the Owner as salvaged shall be moved to on-site storage as directed by the Owner.

3.03 CONTINUITY OF SERVICES

- A. Do not interrupt existing services without Owner's and Architect's approvals.

3.04 TESTING, INSPECTION AND CLEANING

- A. Test wiring and connections for continuity and grounds before fixtures are connected; demonstrate insulation resistance by megger test as required. Insulation resistance between conductors and grounds for secondary distributions systems shall meet NEC

**INPATIENT BATHROOM RENOVATIONS AT THE TAUNTON STATE HOSPITAL, CAIN
BUILDING – TAUNTON, MASSACHUSETTS**

requirements.

- B. Verify and correct as necessary: voltages, tap settings, trip settings and phasing on equipment from secondary distribution system to points of use. Test secondary voltages at loadcenters, and at other locations on distribution systems as necessary. Test secondary voltages under no-load and full-load conditions.
- C. Test lighting fixtures in place for 10 hours. Replace fixtures that fail within 90 days after acceptance by Engineer within Contract Price.
- D. Provide necessary testing equipment and testing.
- E. Failure or defects in workmanship or materials revealed by tests or inspection shall be corrected promptly and retested until satisfactory results are achieved. Replace defective material.
- F. Final Inspection
 - 1. At the final inspection, a factory-trained representative of the manufacturer of the major equipment shall demonstrate that the systems function properly in every respect.
- G. Clean panels and other equipment. Panelboard interiors shall be cleaned and vacuumed. Equipment with damage to painted finish shall be repaired to Architect's satisfaction.
- H. After completion of project, clean the exterior surface of equipment included in this section.

3.05 WARRANTY

- A. Materials provided under this section shall be warranted against defects in materials and workmanship by this Contractor for not less than one (1) year from the date of substantial completion.
- B. This Contractor shall respond to the site to address any warranty contact from the Owner within 48 hours. If the defective item can be repaired, it shall be repaired within 48 hours. Repairs shall be to the full satisfaction of the Owner, and repairs which render an item in a condition less than new will not be accepted. If the item cannot be repaired within 48 hours, it shall be replaced within 48 hours. If the item cannot be repaired or replaced within 48 hours, this contractor shall provide such temporary work as directed by the Owner to address the issue until such time as the issue is permanently addressed. If the issue appears to be across all same or similar products, this contractor shall be prepared to address (repair or replace) the remaining items.

3.06 ACCESS AND ACCESS PANELS

- A. Provide proper access to material or equipment that require access, inspection, replacement, repair or service. If proper access cannot be provided, confer with Architect as to best method of approach to minimize effects of reduced access.

3.07 FIRE BLOCKING AND STOPPING

- A. Provide all materials and labor to penetrate or remove and re-install existing fire blocking, or re-route wiring to avoid fire blocking.
- B. Provide fire stopping for all electrical conduits which enter or pass through fire rated walls or floors. Materials and methods of fire stopping shall be approved by UL. Fire seal fittings shall be used around cable, in sleeves, or in core drilled holes passing through fire rated walls and floors. Fire stopping shall be T&B Fire-Seal, O.Z. Gedney, Minnesota Mining and Manufacturing Company or approved equal.

3.08 WIRING METHODS

- A. Install wire and cable in approved raceways as specified and as approved by authorities that have jurisdiction.
- B. Wiring methods shall be as follows:
 - 1. Interior, finished, dry locations, concealed – EMT or Type MC or AC Cable.
 - 2. Interior, finished, dry locations, exposed – None (conceal wiring methods), except as specifically noted, provide surface metal raceway.
 - 3. Interior, mechanical, electrical or other utility spaces, exposed – EMT or RGS.
- C. Only the best possible workmanship for type MC or AC cable installation shall be accepted. Type MC or AC cable which is not properly supported, neatly installed, or bundled shall be removed and replaced at no additional cost. The acceptability of Type MC or AC cable installation shall be solely the determination of the Engineer.
- D. Provide flexible conduits for connections to electrical equipment and to appliances and equipment that are subject to movement, vibration or misalignment; where equipment connections dictate; and where noise transmission must be eliminated or reduced.
- E. All conductors shall be installed in raceways, as required by the MEC. Wiring shall be concealed in finished spaces.
- F. Splices shall be made only at device outlet boxes. Addition or re-use of boxes in finished areas solely for the purpose of splicing will not be accepted.
- G. All device outlet boxes shall be set flush to the final finish surface. All openings in

**INPATIENT BATHROOM RENOVATIONS AT THE TAUNTON STATE HOSPITAL, CAIN
BUILDING – TAUNTON, MASSACHUSETTS**

the surface finish around the box shall be filled in accordance with the MEC. Where device outlet boxes are located in an area with existing device outlet boxes, match mounting heights, but not less than 18" above finish floor. Mount all boxes true and plumb. Patch and paint as needed.

- H. Provide all traveler wiring required for three and four way switching shown.
- I. All wiring shall be new. Remove all existing wiring and raceways to the maximum extent possible. Cut back and abandon concealed wiring and raceways.
- J. All conductors shall be neatly arranged and bundled, without excess cable at any point, but with reasonable slack to allow installation and removal of the device.

3.09 GROUNDING

- A. Bond and ground equipment and systems connected under this Section in accordance with standards of MEC and other applicable regulations. Provide approved means for terminating and connecting grounding conductors, such as lugs, crimp-on terminals, green ground screws, grounding wirenuts, etc.
- B. Conduit system shall be electrically continuous throughout. Equipment frames, enclosures, boxes, etc. shall be grounded by use of green colored equipment ground conductor sized as per Table 250.122 of MEC. Raceway ground alone will not be accepted.
- C. Green bonding jumper shall be installed in flexible conduits.

3.10 MOTORS AND CONNECTIONS

- A. Motors will be provided under other Sections.
- B. Check electrical connections and sizing of motor circuit protection and prevent damage to motors and equipment from incorrect direction of rotation.
- C. Consult drawings and specifications and shop drawings for verifications of size, speed, and operation of motors furnished under other Sections.
- D. Final connection to appliances and motors shall be made with flexible conduit (at least 16" long) with green ground wire installed.
- E. Obtain necessary control wiring and interlocking diagrams from equipment suppliers for installation under this Section and connect equipment circuits for proper sequence of operation. Refer to sequence of operations provided under other Sections, and circuit equipment via control devices such as thermostats, relays, aquastats, contactors, etc.

3.11 WIRING DEVICES

- A. Mount all wiring devices plumb in device outlet boxes. Center devices on boxes, and set true within the device plate. Set device plates so all edges contact surface, and conceal box edge.
- B. Side wire devices only. Back wiring will not be accepted.
- C. In addition to any locations depicted on the plans, provide GFCI protection for all 125- and 250-volt receptacles located in the following locations, unless excepted by the Code:
 - 1. Bathrooms.
 - 2. Within 6 feet of the top inside edge of a sink bowl.
 - 3. Within 6 feet of the outside edge of the bathtub or shower stall.

3.12 LIGHTING FIXTURES

- A. Verify mounting construction, and provide fixtures, ballasts, frames, rings, mounting boards and other accessories suitable for construction encountered.
- B. Coordinate installation of fixtures with installation of casework materials and mounting system. Coordinate wiring stub out location, so as to maintain wiring to light fixtures effectively concealed.
- C. Investigate lighting fixture locations and supports to ensure that no interference exists between lighting fixture, supports and other equipment. Correct interference as directed by Engineer.

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

2021-052 Inpatient Bathroom Renovations Project

Cain Taunton State Hospital
60 Hodges Ave. Taunton, MA 02780

List of Drawings

Cover

D1- Demo Floor Plans, Demo Ceiling Plans

A1- Floor Plans, Reflected Ceiling Plans, Elevations

A2- Floor Plans, Reflected Ceiling Plans, Elevations

A3- Floor Plans, Reflected Ceiling Plans, Elevations and Details

P1- Plumbing New and Demolition Part Plans

P2- Plumbing New and Demolition Part Plans

M-1- HVAC New Work and Demolition Part Plans

M-2- HVAC New Work Part Plans

M-3- HVAC Legend, Schedule, and Details

E1- Electrical Demolition and New Work Floor Plans

NOTES:

NO EXPLORATORY DEMOLITION OF THE EXISTING BUILDING HAS BEEN CONDUCTED. THE CONDITIONS SHOWN ON THE PLANS HAVE BEEN DEVELOPED FROM SITE VISITS, SITE MEASUREMENTS AND PREVIOUS DEVELOPMENT AND IMPROVEMENT PLANS OF THE BUILDING. IT IS INCUMBENT UPON THE CONTRACTOR TO VISIT THE SITE, VERIFY ALL EXISTING CONDITIONS, SERVICES, DIMENSIONS, SIZES, ACCESS POINTS AND CONDITIONS IN ORDER TO DETERMINE ALL WORKING CONDITIONS, ACCESS, AVAILABILITY, ETC., PRIOR TO BIDDING, ORDERING, OR CONSTRUCTION.

CONDUCT OF WORK:

1. ALL WORK TO BE DONE IN CONFORMANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS AND CODES. ALL WORK TO BE COMPLETED IN CONTINUOUS, WORKMANLIKE MANNER. CONTRACTOR TO CONSULT WITH OWNER FOR ALL WORKING AND STAGING CONDITIONS, HOURS/DAYS OF OPERATION PRIOR TO BID. CONTRACTOR REQUIRED TO PROVIDE W/ LIABILITY POLICY WITH LIMITS AND AMOUNTS AS SPECIFIED BY OWNER, ALONG WITH REQUISITE PROOF OF POLICIES AND COVERAGE AS REQUIRED BY LAW.
2. CONTRACTOR TO THOROUGHLY REVIEW ALL PROPOSED WORK AND EXISTING CONDITIONS TO FAMILIARIZE THEMSELVES WITH PROJECT REQUIREMENTS AND COORDINATE WITH GREATER PROJECT REQUIREMENTS AND SEQUENCING.
3. CONTRACTOR TO VERIFY ALL EXISTING AND PROPOSED DIMENSIONS PRIOR TO INSTALLATION OF ANY WORK. DIMENSIONS SHOWN AS 'CLEAR' OR 'MIN.' REFER TO FINISH DIMENSIONS AS REQUIRED BY CODE OR REGULATION. CONTRACTOR TO VERIFY CLEARANCES IN LAYOUT PHASE OF WORK, PRIOR TO INSTALLATION AND NOTIFY ARCHITECT OF DISCREPANCIES AS REQUIRED.
4. DEMOLITION: CONTRACTOR TO PROTECT ALL WORK TO REMAIN IN AND AROUND THE AREA OF DEMOLITION. ALL FIXTURES AND APPURTENANCES TO BE RE-USED SUCH AS EXISTING WINDOW SHALL BE CAREFULLY REMOVED SHALL BE STORED AND PROTECTED BY THE CONTRACTOR. THE CONTRACTOR SHALL TAKE REQUIRED STEPS TO PROPERLY RESTRICT THE SPREAD OF DUST, DEBRIS, NOISE AND ODOR. THE CONTRACTOR SHALL PROVIDE A PLAN IN WRITING TO THE OWNER FOR THESE PROTECTIONS. ALL DEMOLITION DEBRIS AND CONSTRUCTION WASTE SHALL BE REMOVED AND DISPOSED OF LEGALLY. THE CONTRACTOR SHALL PROVIDE EVIDENCE OF SUCH UPON REQUEST.
5. CONTRACTOR TO SUBMIT ALL PRODUCTS, FINISHES AND COLORS TO OWNER FOR APPROVAL PRIOR TO ORDER OR INSTALLATION. PRODUCTS AND MATERIALS CALLED OUT ARE NOT INTENDED TO LIMIT THE USE OF ALTERNATE MATERIALS OR MANUFACTURERS BUT REPRESENT THE MINIMUM REQUIRED QUALITY, EXPECTED PERFORMANCE AND DESIGN.

CONCRETE WORK: EXISTING CAST IN PLACE CONCRETE TO BE REMOVED SHALL BE CUT WITH A SAW TO THE MINIMAL DIMENSIONS REQUIRED TO FACILITATE THE NEW WORK. ALL SUB-SLAB OR EMBEDDED SERVICES SHALL BE PROPERLY BEDDED AND SLEEVED PRIOR TO INSTALLATION OF NEW CONCRETE FLUSH WITH EXISTING. ALL NEW WORK THRU EXISTING CONCRETE SHALL BE PATCHED TO MATCH ADJACENT SURFACES, TO SEAL NEW PENETRATIONS SIMILAR TO EXISTING. CLEAN EXISTING CONCRETE SLAB AREAS TO RECEIVE LEVELER OR NEW EPOXY FLOORING AS REQUIRED TO ENSURE PROPER ADHESION OF NEW MATERIALS. REFER TO SELECTED FLOORING MANUFACTURER FOR REQUIRED PREPARATION AND INSTALLATION PRACTICES. PRIME/FLASH/TREAT ALL CONCRETE AND WALL SURFACES AS REQUIRED PRIOR TO FINISHES INSTALLATION.

NEW DOOR TO BE 1 ³/₄" REINFORCED STEEL DOOR AND FRAME AS NOTED IN SCHEDULE. ALL HARDWARE TO BE LIGATURE RESISTANT/LIGATURE FREE WITH FINISHES, LOCKING AND KEYING AS COORDINATED WITH OWNER. DOOR TO HAVE CONTINUOUS BARREL/PIN HINGE, AND LOCK ONLY. DOOR TO BE PAINTED ALL SIDES TO MATCH EXISTING.

NEW PARTITIONS ADJACENT SHOWER AT 357 AND 457: ⁵/₈" ABUSE AND MOLD RESISTANT GYP. BD. EACH SIDE 3 ⁵/₈" 25 GA STEEL STUDS AT 12" O.C. INSTALL SOLID BLOCKING AS REQUIRED TO MOUNT FIXTURES/BARS SHOWN/NOTED IN PLANS.

PROJECT SUMMARY:

IMPROVEMENTS TO SIX INPATIENT SHOWER ROOMS, AND THE CONVERSION OF TWO TUB ROOMS INTO SHOWER ROOMS. ROOM SIZES RANGE FROM 40 TO 87 SQUARE FEET. IMPROVEMENTS INCLUDE NEW FLOORING AND WALL FINISHES, PARTIAL TO FULL CEILING FINISHES, NEW LIGATURE RESISTANT PLUMBING FIXTURES AND ACCESSORIES, AND NEW LIGATURE RESISTANT GRAB BARS, ASSOCIATED HVAC AND ELECTRICAL UPGRADES. NO EXISTING DOORS OR EGRESS COMPONENTS TO BE MODIFIED, NO WINDOWS IN ANY SPACES.

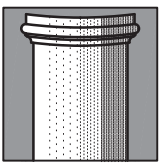
PROJECT AREAS INCLUDED ARE ON 3RD AND 4TH FLOOR OF THE EXISTING 4 STORY BRICK BUILDING. THE USE GROUP OF THE BUILDING IS 1-2. BOTH THE USE GROUP AND OCCUPANCY CONDITION OF THE BUILDING AND RENOVATED SPACE WILL REMAIN UNCHANGED. PROJECT DOES NOT MODIFY EGRESS ACCESS, PATH OF TRAVEL, SIZE OR NATURE OF CARE SUITES NOR IS INTENDED TO MODIFY THE NATURE OF ANY SMOKE OR FIRE DETECTION OR ALARM SYSTEMS AS REQUIRED BY 2015 IBC SECTION 407. EXISTING CORRIDOR WALLS ARE SMOKE PARTITIONS, AND ALL WORK ASSOCIATED WITH THESE WALLS SHALL MAINTAIN APPLICABLE REQUIREMENTS OF 2015 IBC SECTION 710. ALL JOINTS AND PENETRATIONS THROUGH THESE PARTITIONS SHALL BE FULLY SEALED WITH APPROVED MATERIALS TO PROVIDE EFFECTIVE BARRIER TO LIMIT TRANSFER OF SMOKE.

THIS PROJECT SHALL CONFORM WITH THE REQUIREMENTS OF 2015 IEBC, CHAPTER 4, PRESCRIPTIVE COMPLIANCE METHOD, SECTION 403 ALTERATIONS; 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.



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The MZO GROUP
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NO.	DATE	REVISIONS		DR/CK
		DESCRIPTION		

PREPARED FOR: DEPARTMENT OF MENTAL HEALTH 167 LYMAN STREET WESTBOROUGH, MA 01581	DRAWING: COVER, PROJECT SUMMARY, EXISTING FLOOR PLAN
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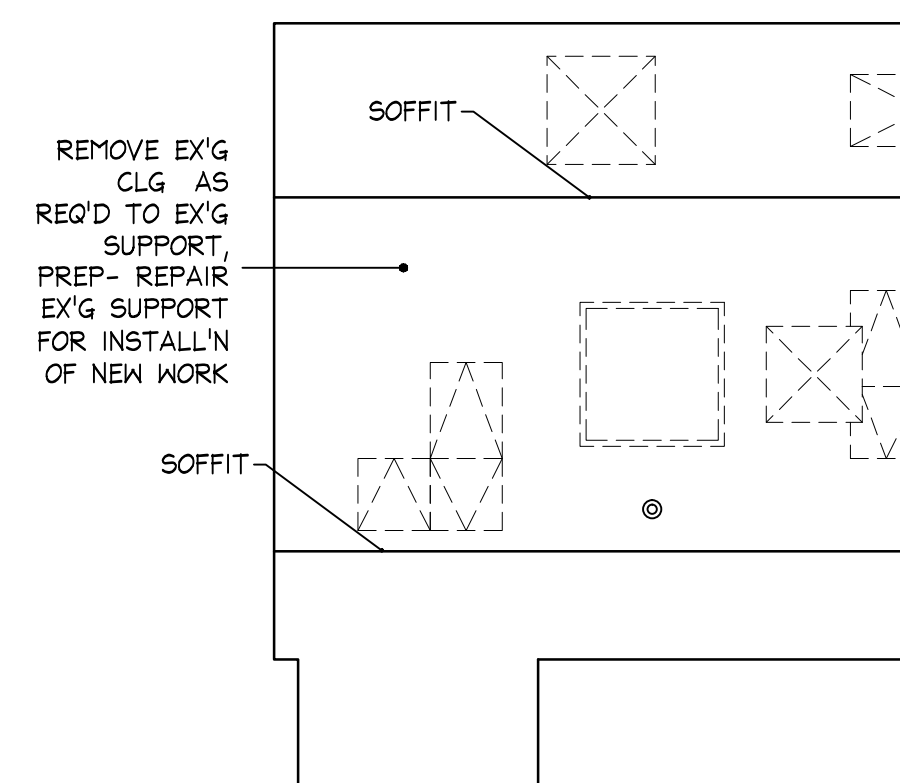
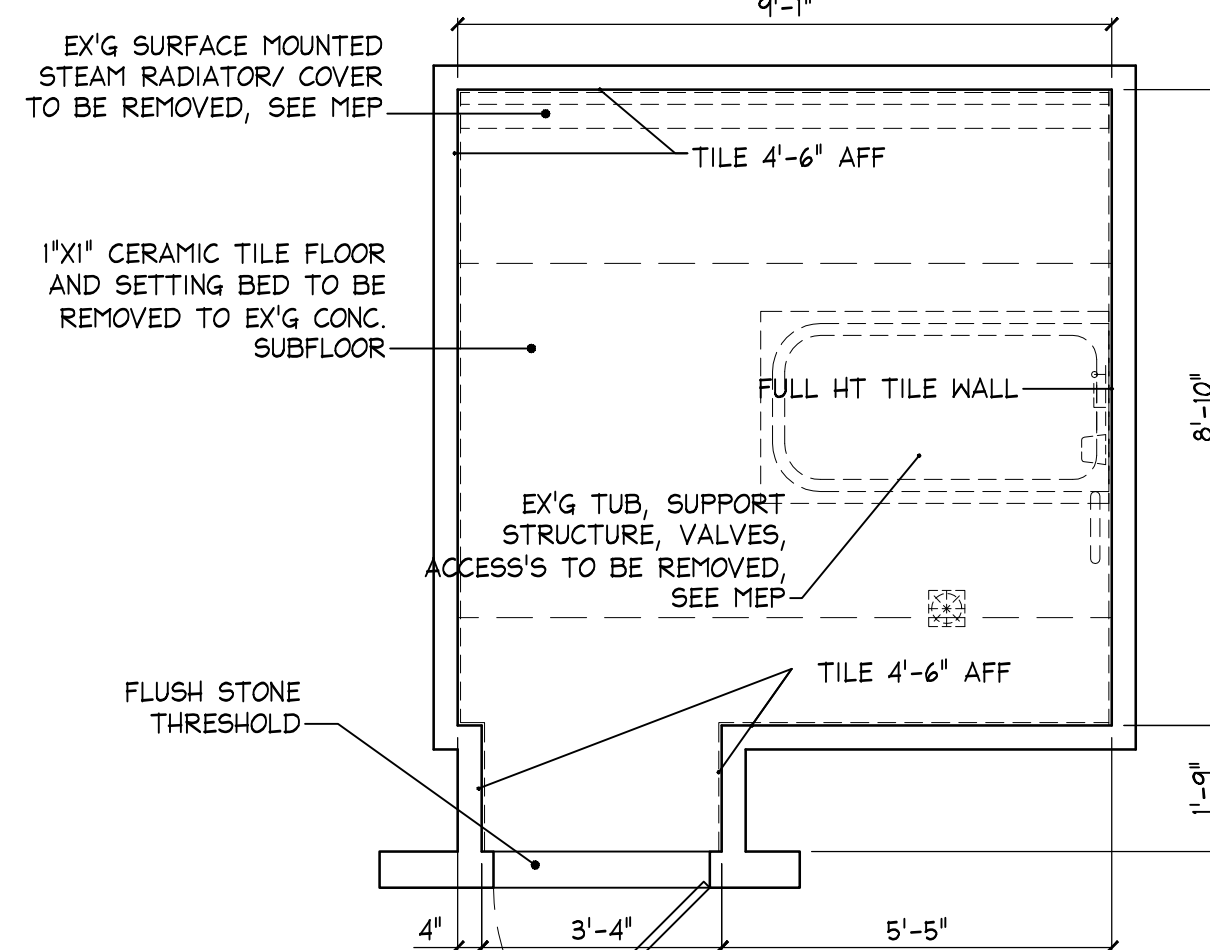
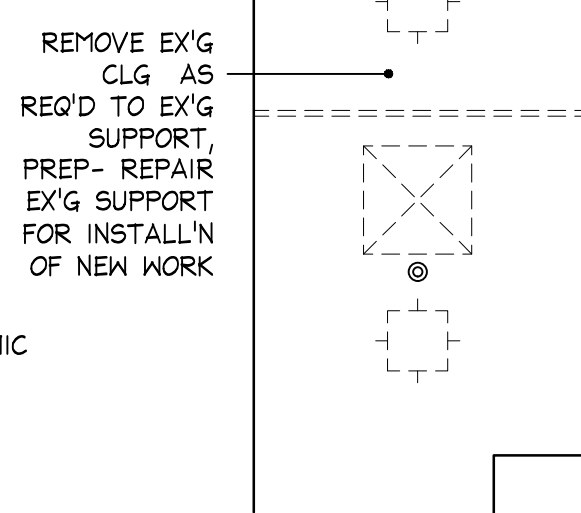
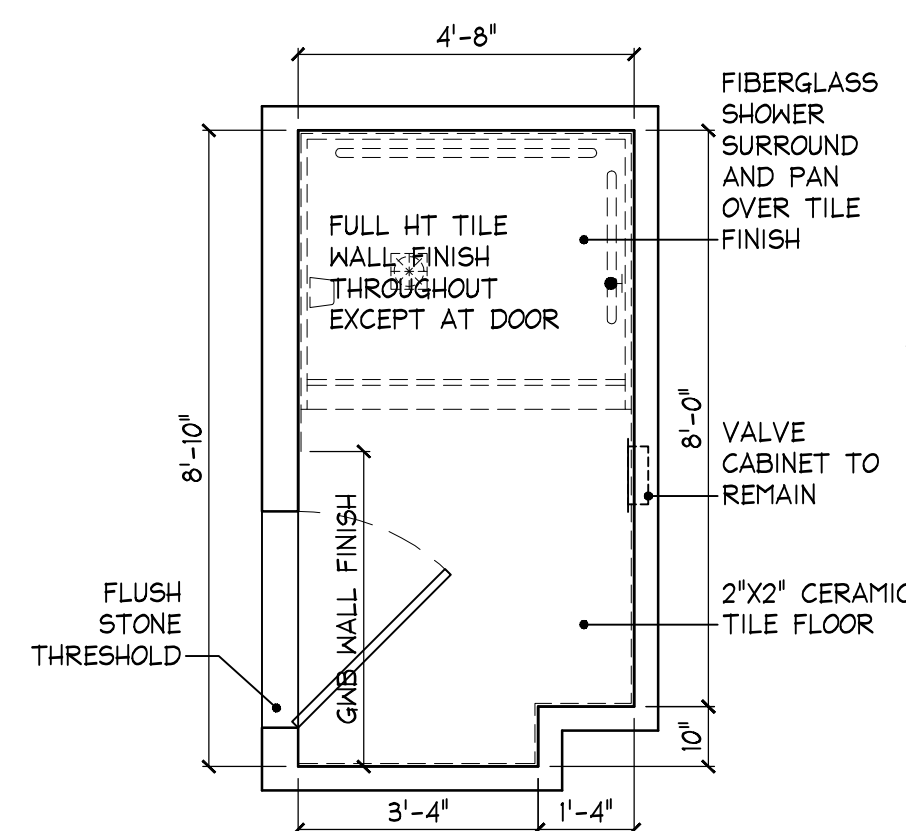
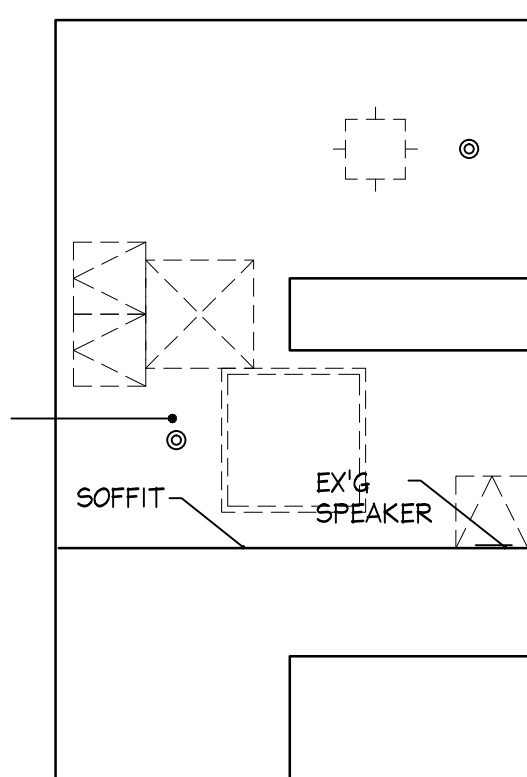
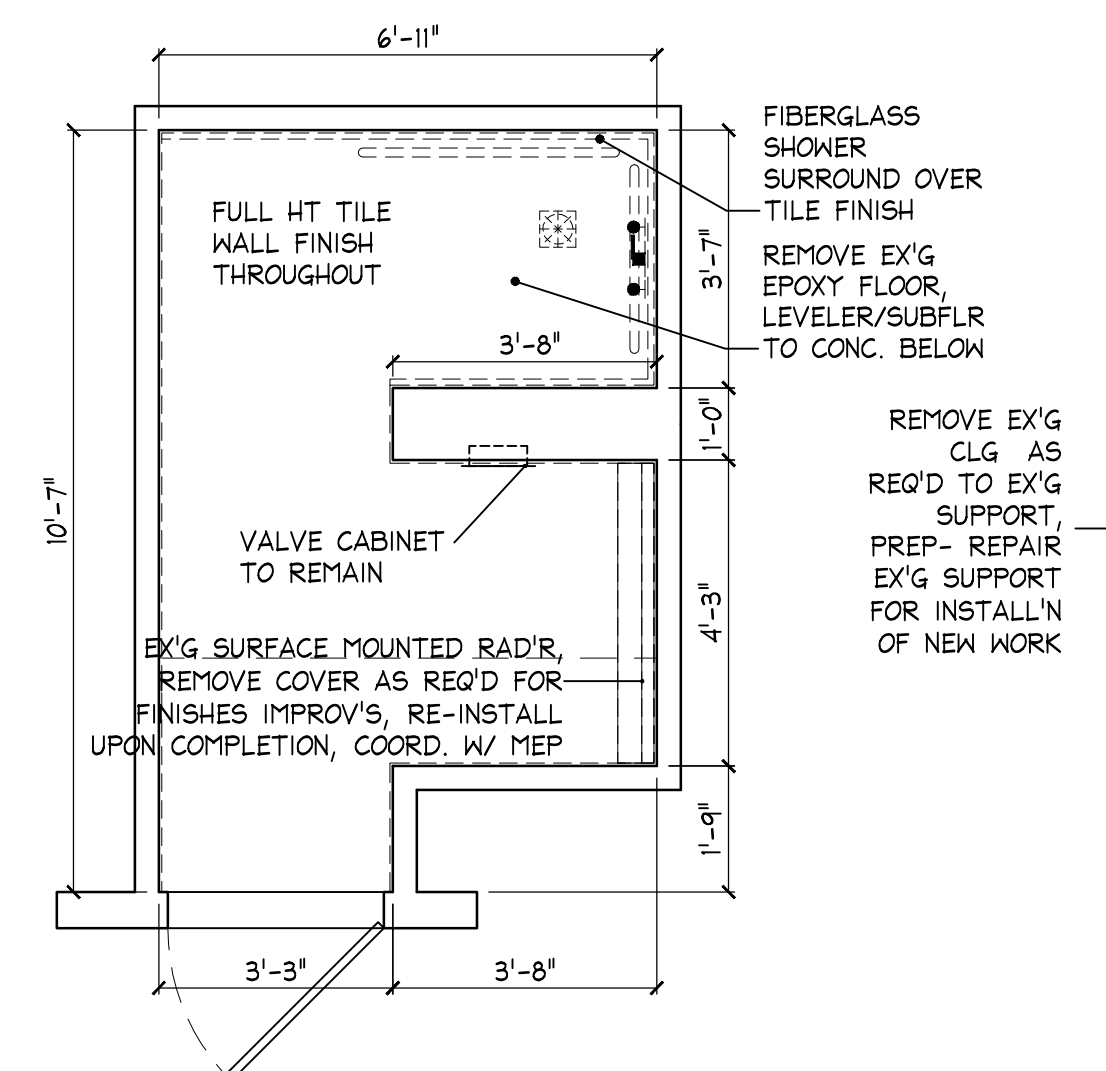
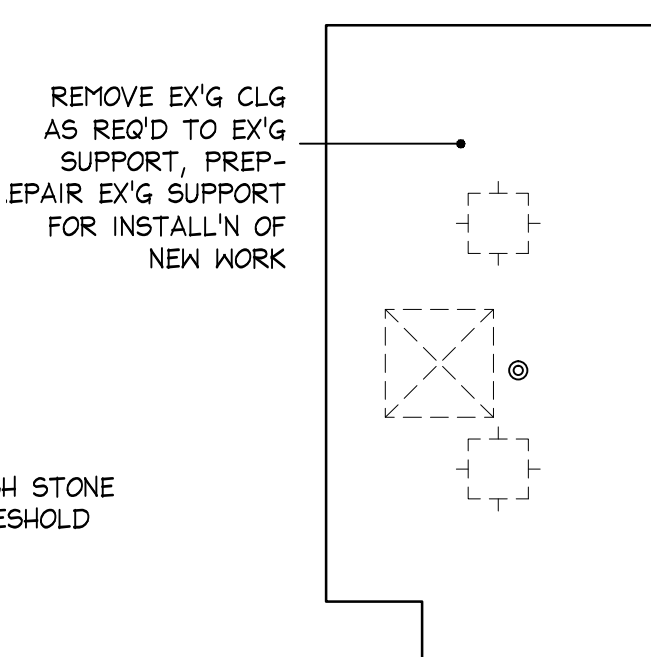
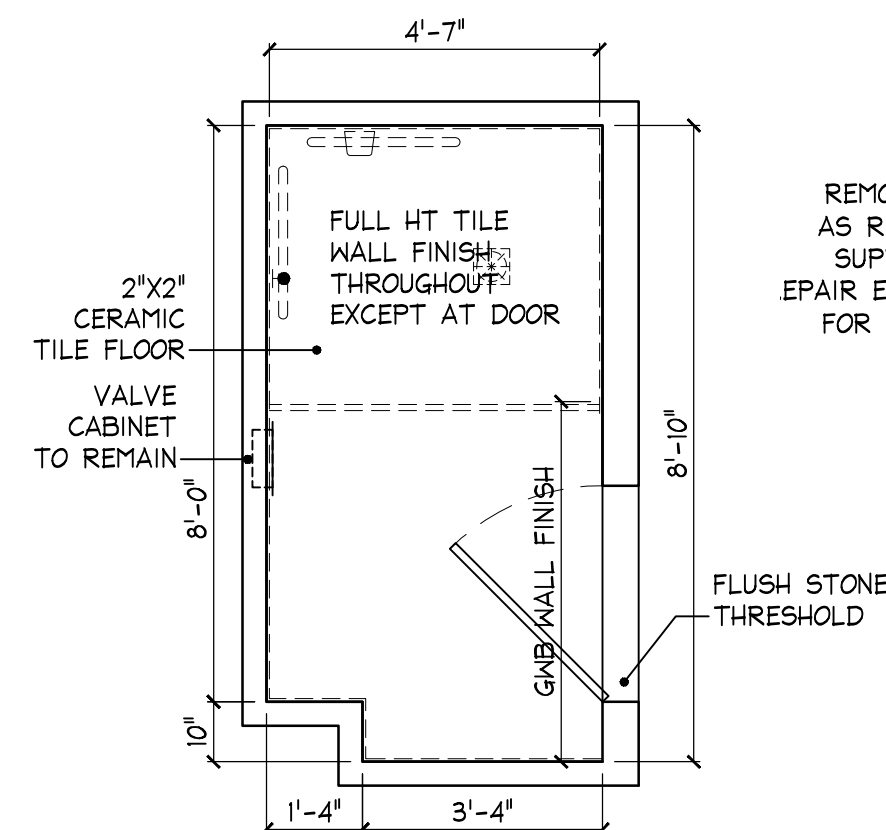
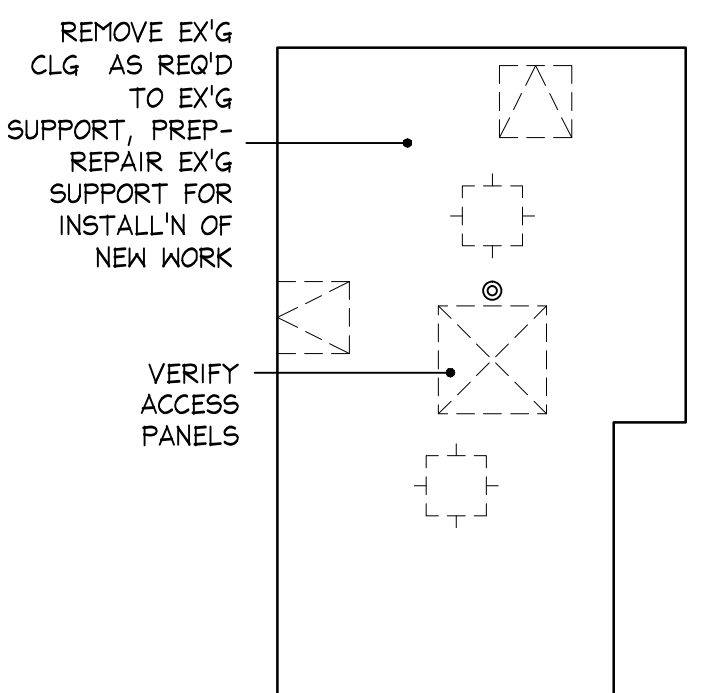
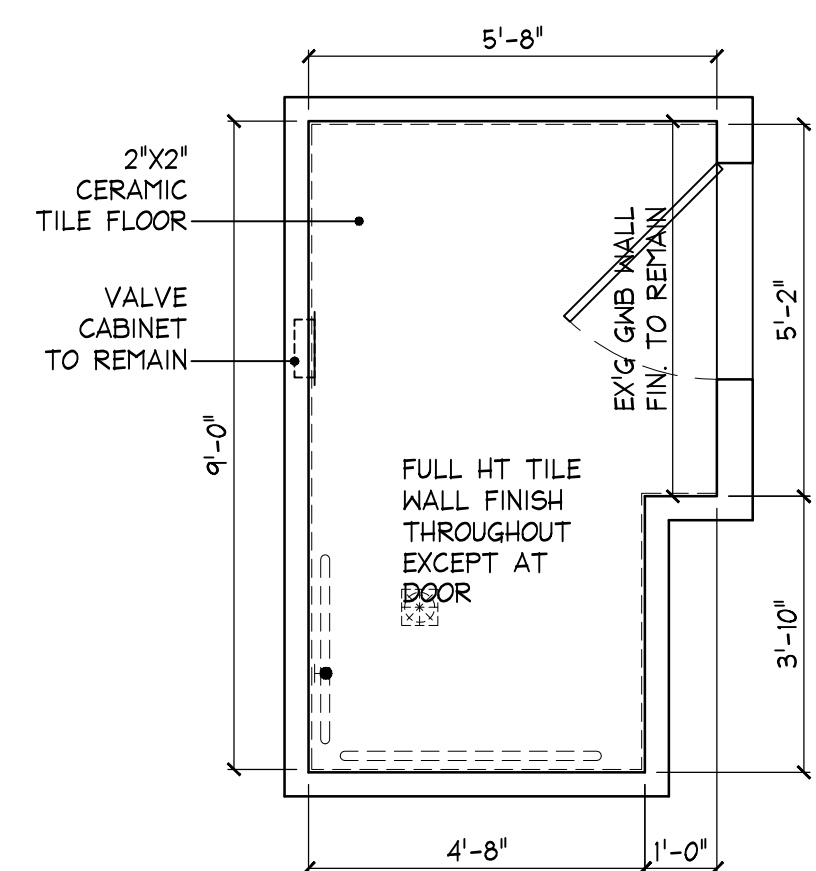
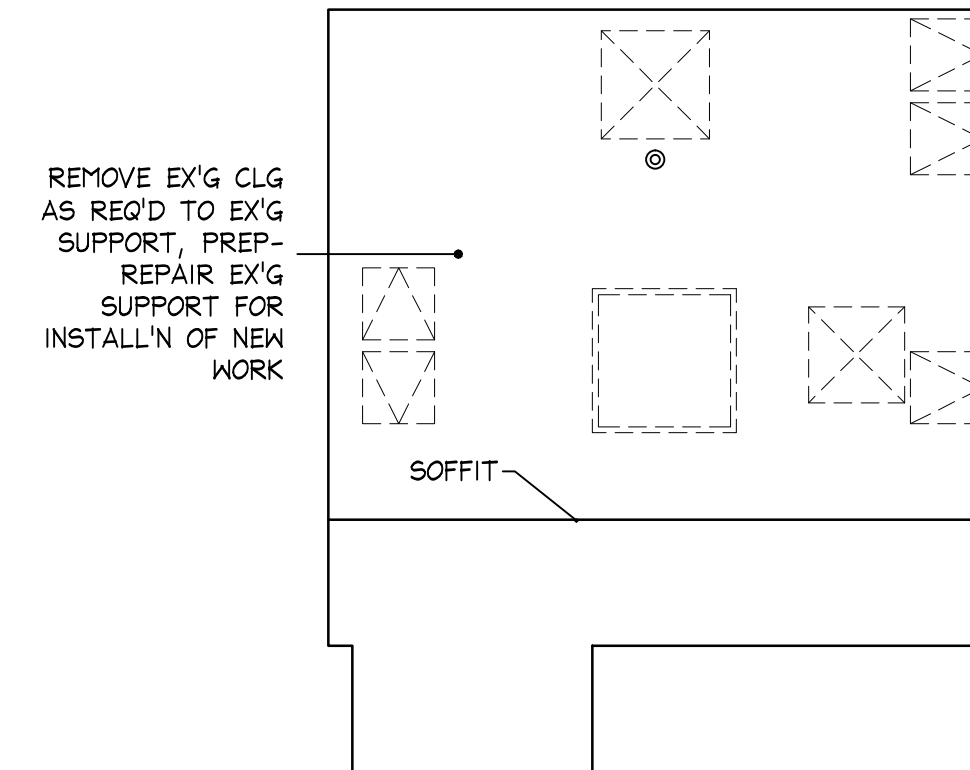
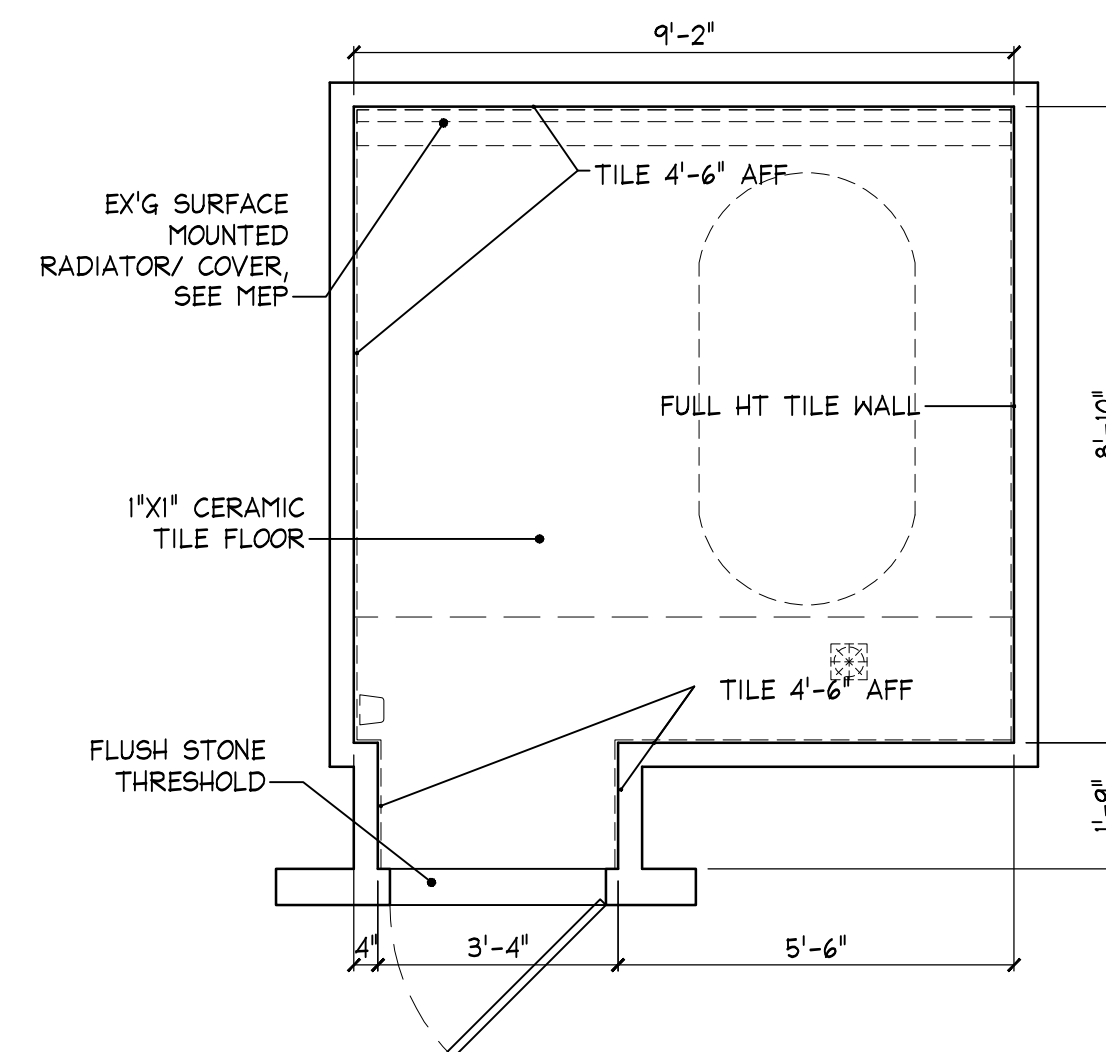
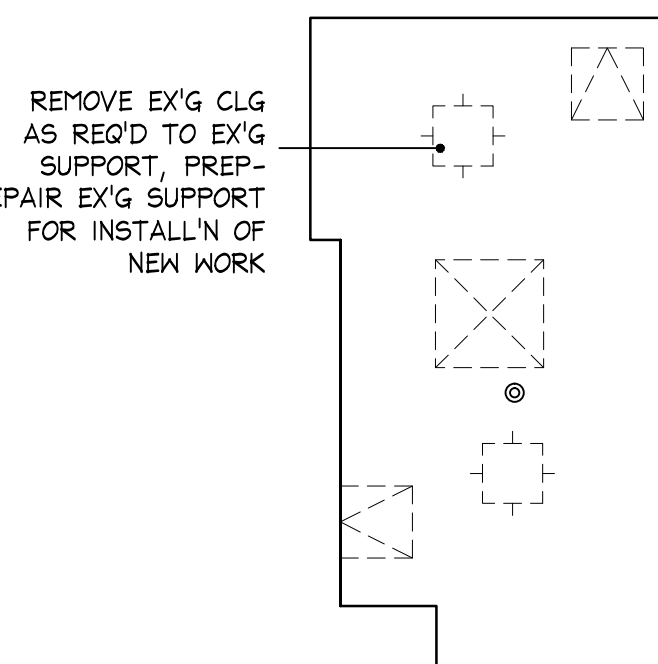
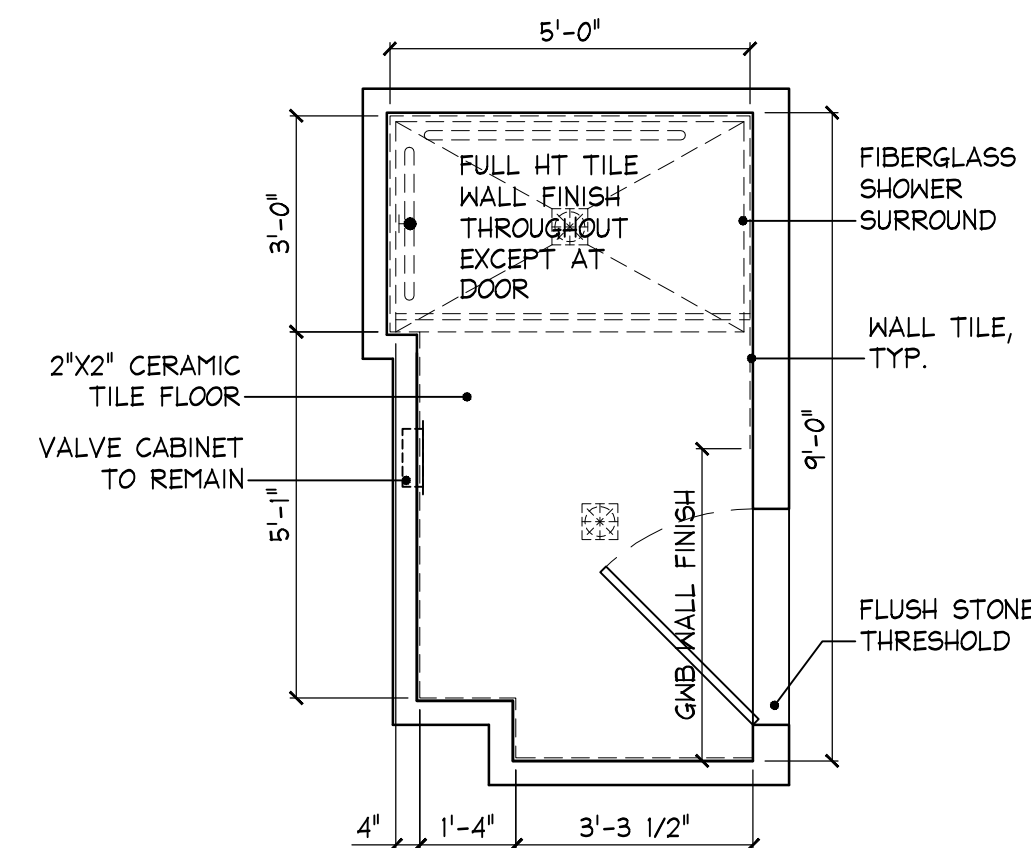
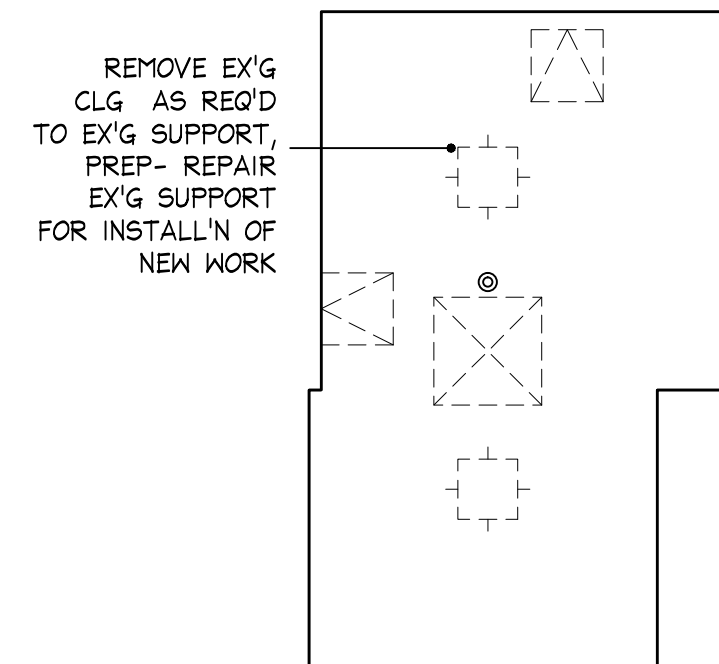
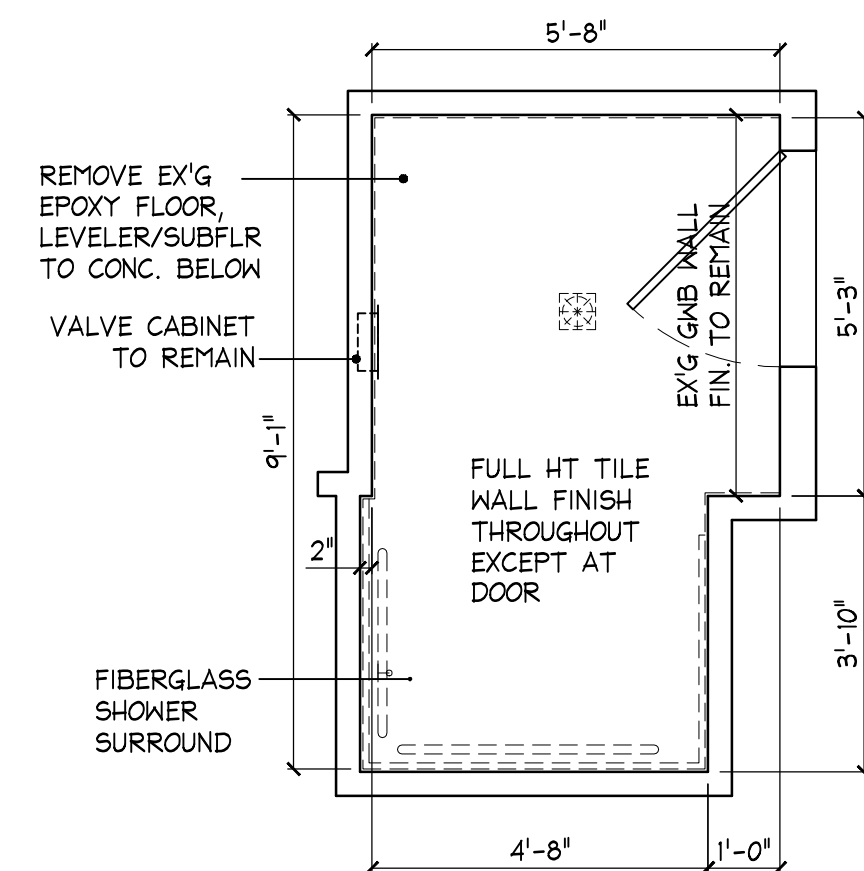
PROJECT: 2021-052 CAIN TAUNTON STATE HOSPITAL 60 HODGES AVE. TAUNTON MA 02780	PLAN SET: INPATIENT BATHROOM RENOVATIONS PROJECT
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CONECO

Engineers, Scientists & Surveyors

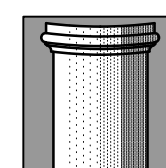
4 FIRST STREET, BRIDGEWATER, MASSACHUSETTS 02324
PHONE 508-697-3191 OR 800-548-3355 FAX 508-697-5996
WEBSITE: www.coneco.com

DATE	03/02/2023
DESIGNED: XXX	CHECKED: XXX
DRAFTED: XXX	IN CHARGE: XXX
SCALE:	AS SHOWN
PROJECT NO.	7073
SHEET NO.	Cover
OF ##	



- AT ALL SHOWER ROOMS:

1. REMOVE WALL AND COVE BASE TILE COMPLETE, FLOORING AND MORTAR BASE TO CONCRETE FLOOR. REMOVE EV'G EPOXY FLOOR AND SUBFLOOR TO CONC. FLOOR BELOW AT 302, 431
2. REMOVE SHOWER INSERTS, PLUMBING FIXTURES AND ACCESSORIES. COORDINATE W/ MEP, NOTE: VALVE BOXES TO REMAIN
3. REMOVE LIGHT FIXTURES, SUPPLY/EXHAUST GRILLS, OTHER CEILING FIXTURES AND EXISTING CEILING GYP. AS REQUIRED FOR INSTALLATION OF NEW WORK, COORDINATE WITH MEP
4. REMOVE EXISTING RADIATOR COVER, RELOCATE- REROUTE HEATING LINES, COORD. W/ MEP
5. REMOVE ALL CONTROLS AND PLATES FOR RE-INSTALLATION/RELOCATION
6. INSTALL NEW GYP. BD. SUBSTRATE OR PATCH/REPAIR WALLS FOR INSTALLATION OF NEW ALTRO WHITECROCK WALL COVERING EXCEPT AT PLUMBING
7. INSTALL CONCRETE BOARD AND WALL TILE AT PLUMBING
8. INSTALL NEW ANTI-LIG FIXTURES AND ACCESSORIES
9. INSTALL LINEAR DRAIN OUTSIDE SHOWER, SPOT DRAIN IN SHOWER
10. PREPARE FLOOR WITH NEW LEVELER WITH MAX. 1/60 SLOPE, PRIME AND INSTALL NEW EPOXY FLOORING WITH INTEGRAL 12" SANITARY COVE BASE
11. INSTALL NEW ANTI-LIG LIGHT FIXTURES, SUPPLY/EXHAUST GRILLS
12. PATCH/PAINT CEILING, INSTALL NEW PVC CEILING AT SHOWER AREAS AS SHOWN IN RCP
13. INSTALL BUILT-IN ANTI-LIG BENCH WHEN SHOWN



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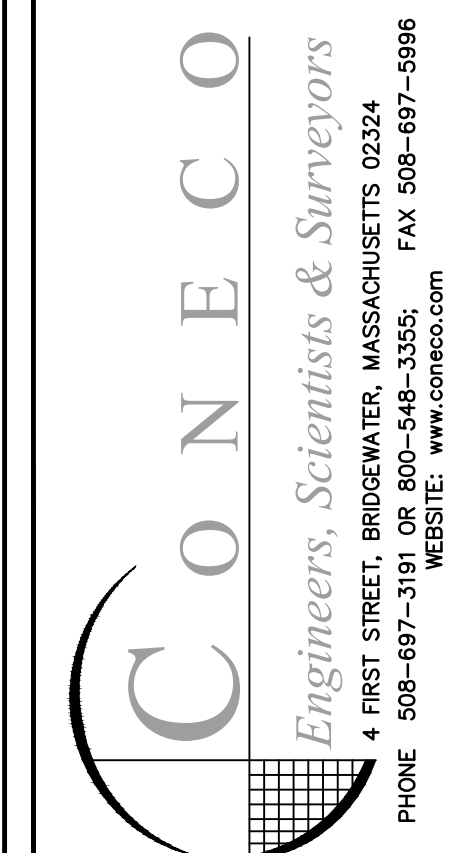
335 Main Street, Suite 201 ■ Stoneham, Massachusetts 02180
Voice 781-279-4446 ■ Fax 781-279-4448 ■ E-Mail: mzo@mzogroup.com ■ www.mzogroup.com

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FOR:
DEPARTMENT OF MENTAL HEALTH
167 LYMAN STREET
WESTBOROUGH, MA 01581

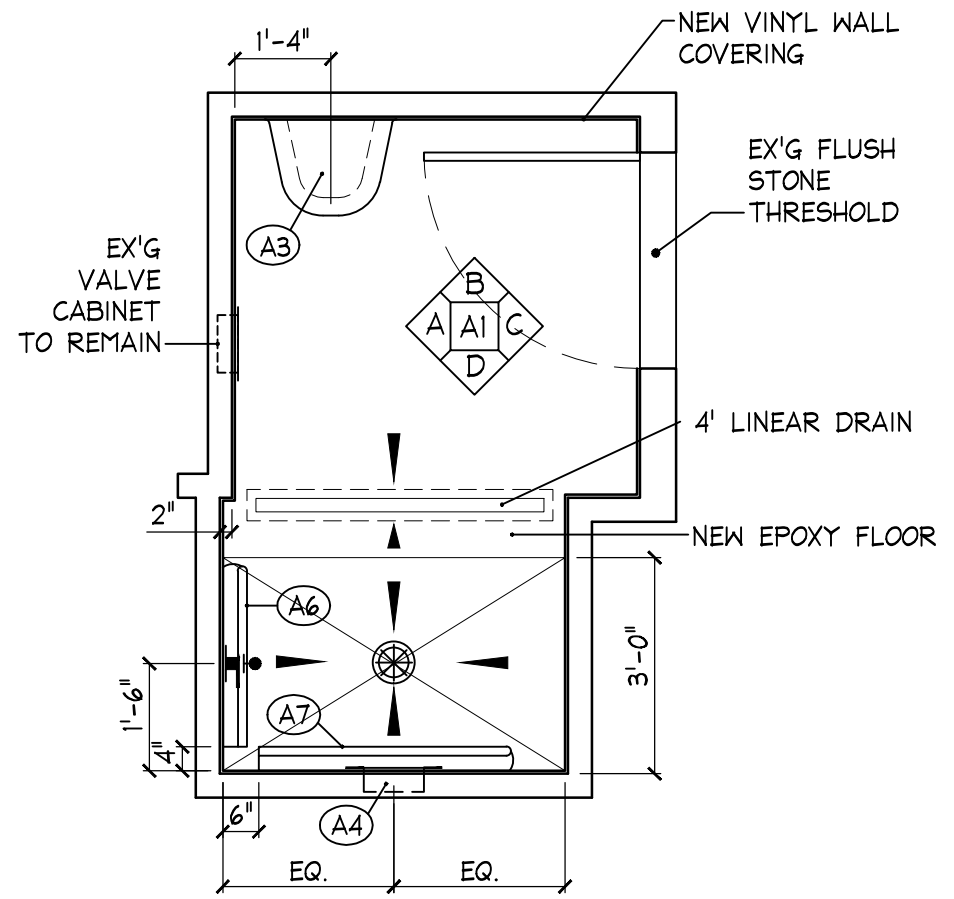
DEMO FLOOR PLANS, DEMO
CEILING PLANS

2021-052
TAUNTON STATE HOSPITAL
60 HODGES AVE.
TAUNTON MA 02780

INPATIENT BATHROOM
RENOVATIONS PROJECT

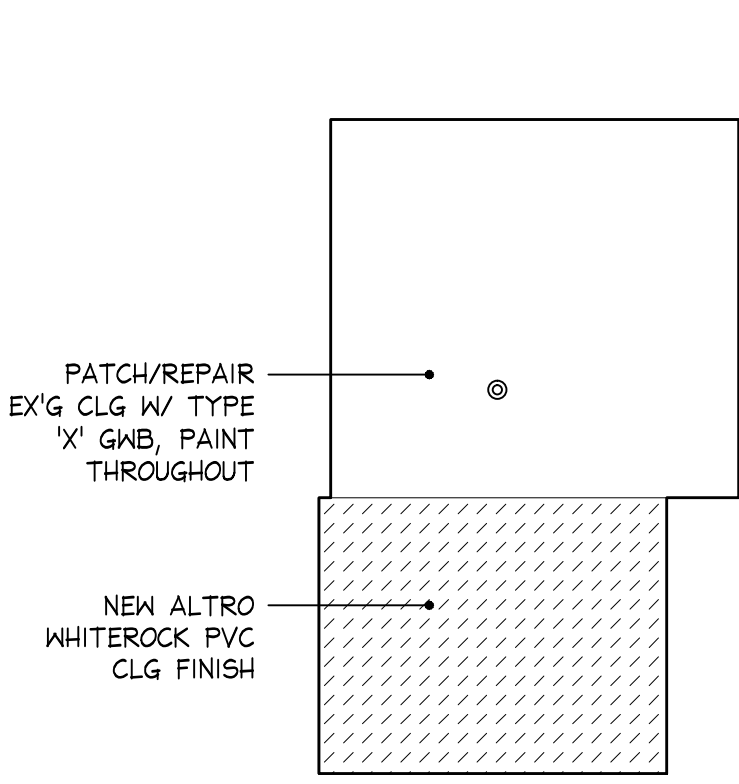
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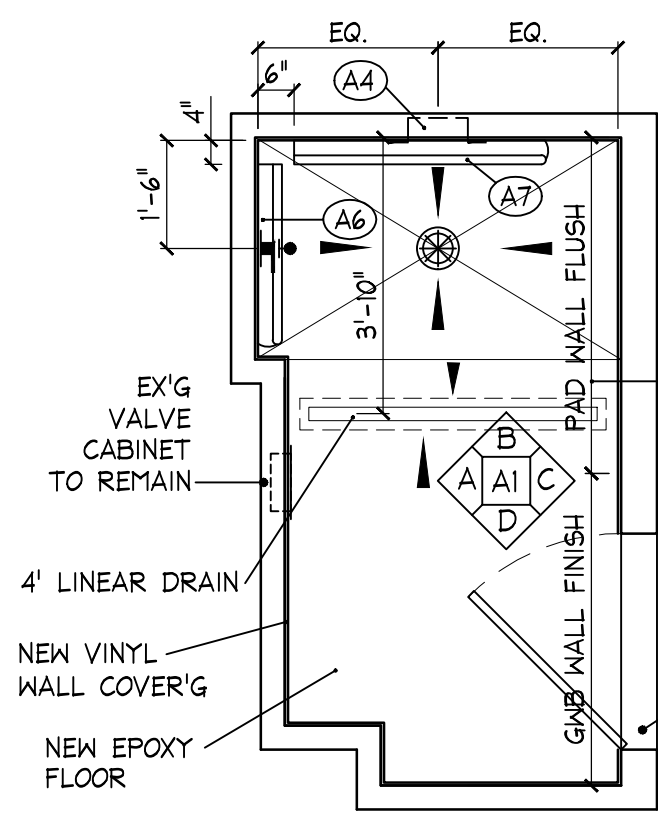
ROOM C302 FLOOR PLAN

3/8"x1'-0"



ROOM C302 RCP

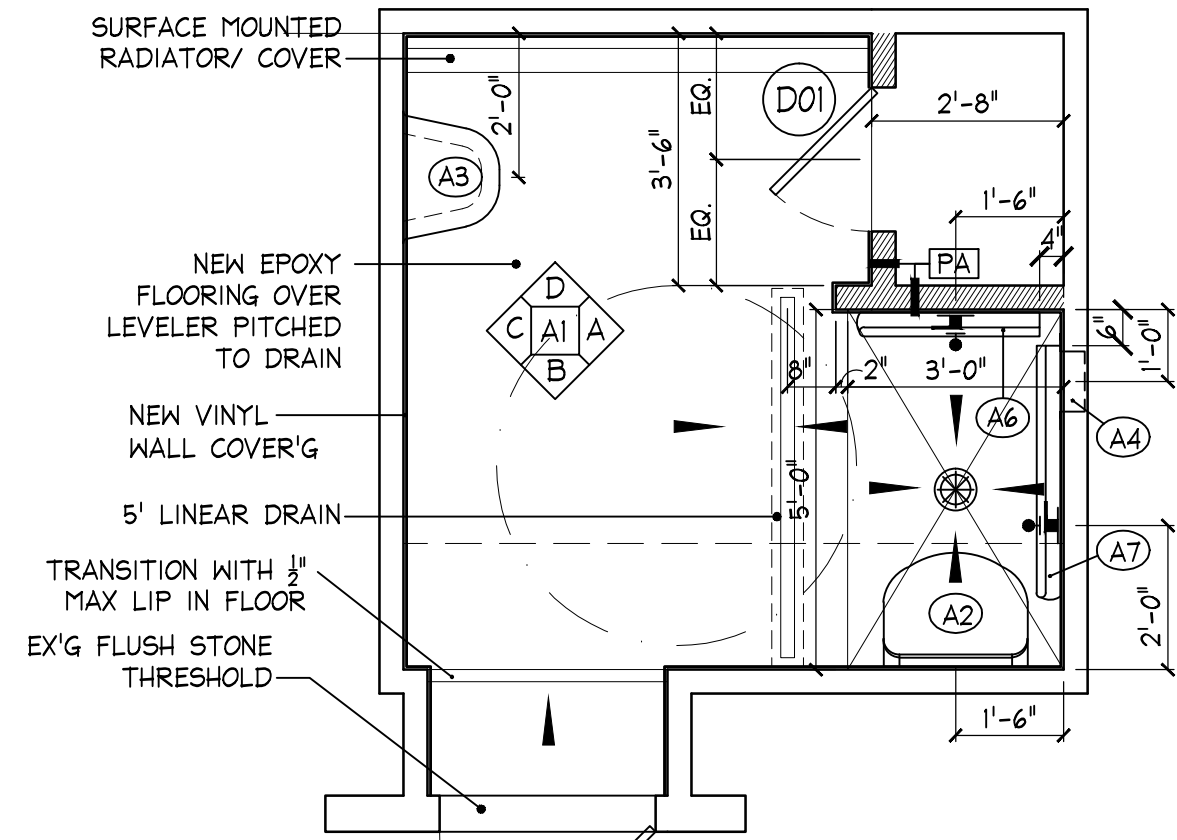
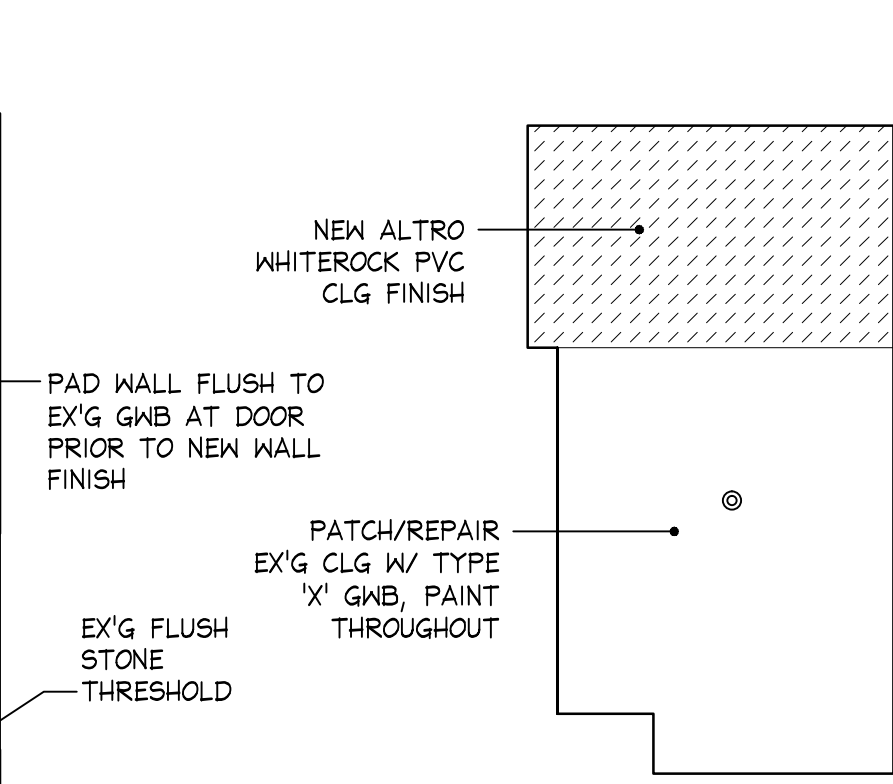
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ROOM C304 FLOOR PLAN

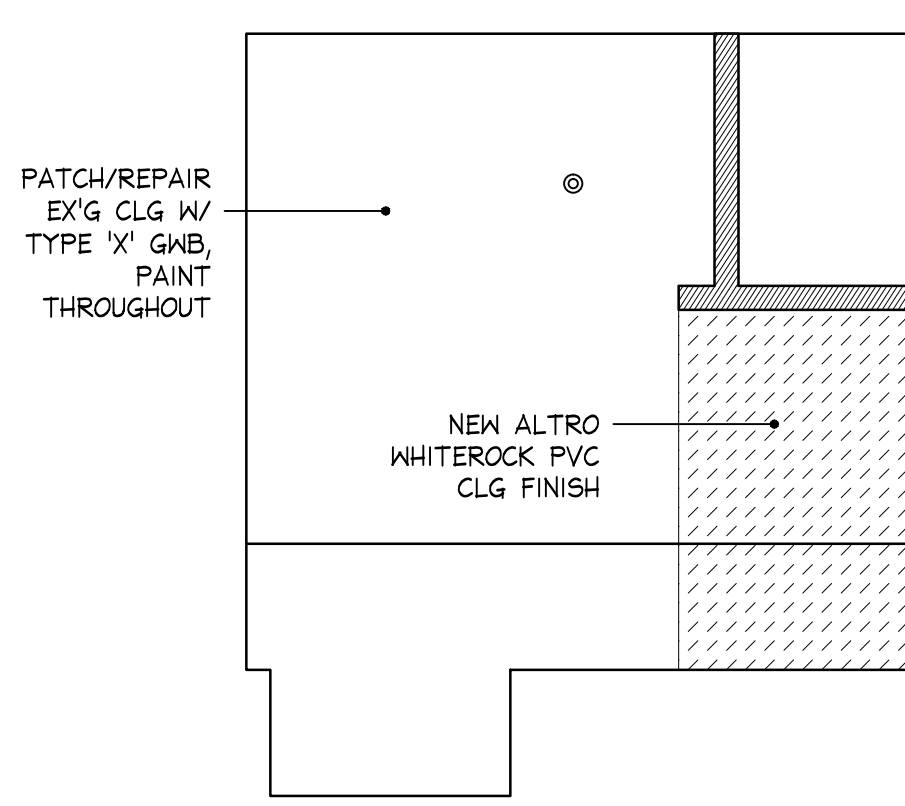
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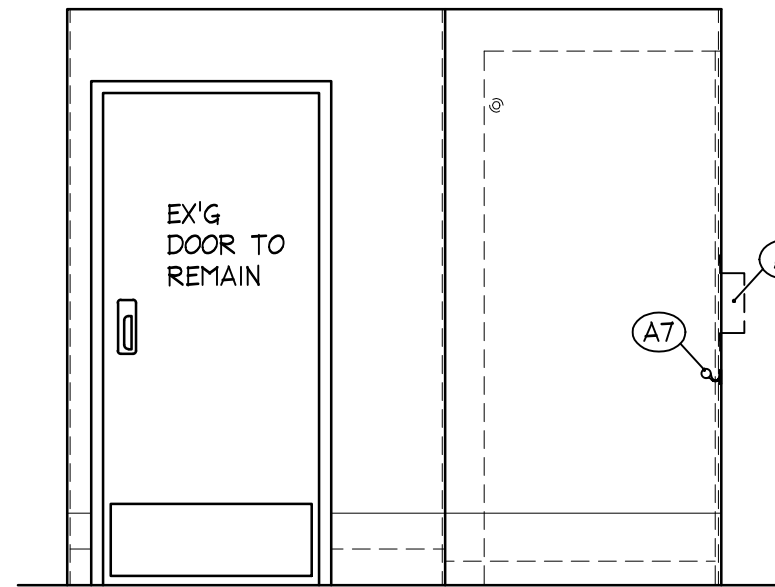
ROOM 357 FLOOR PLAN

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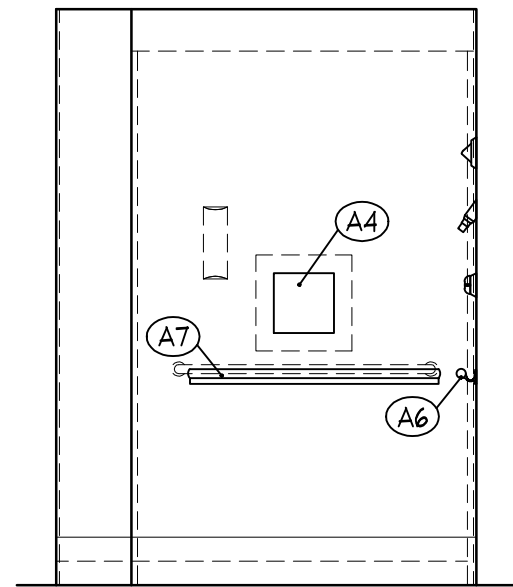


ROOM 357 RCP

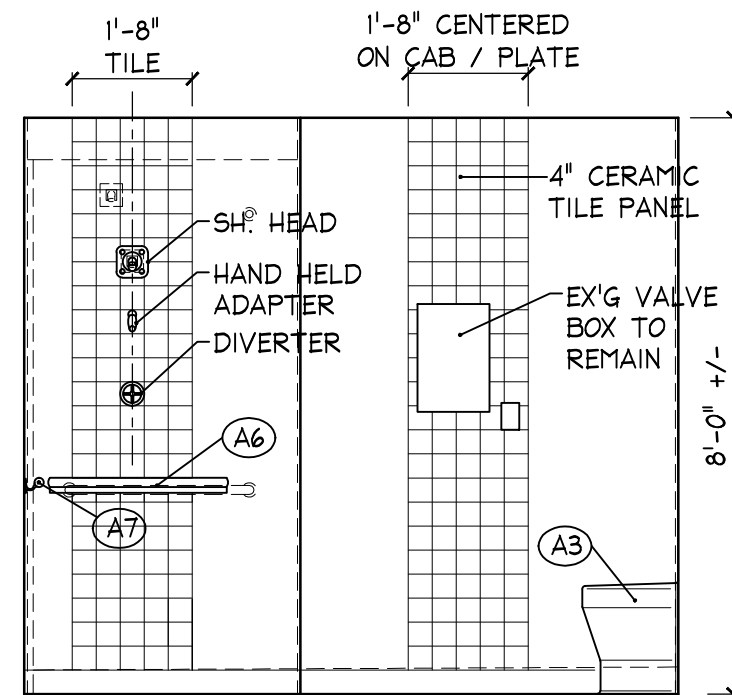
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ELEV C



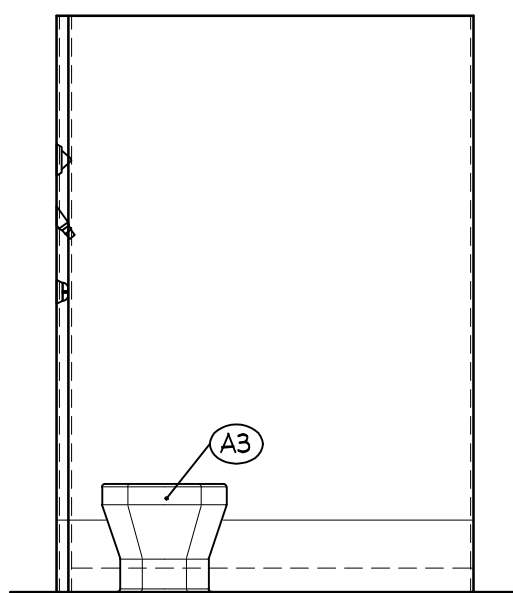
ELEV D



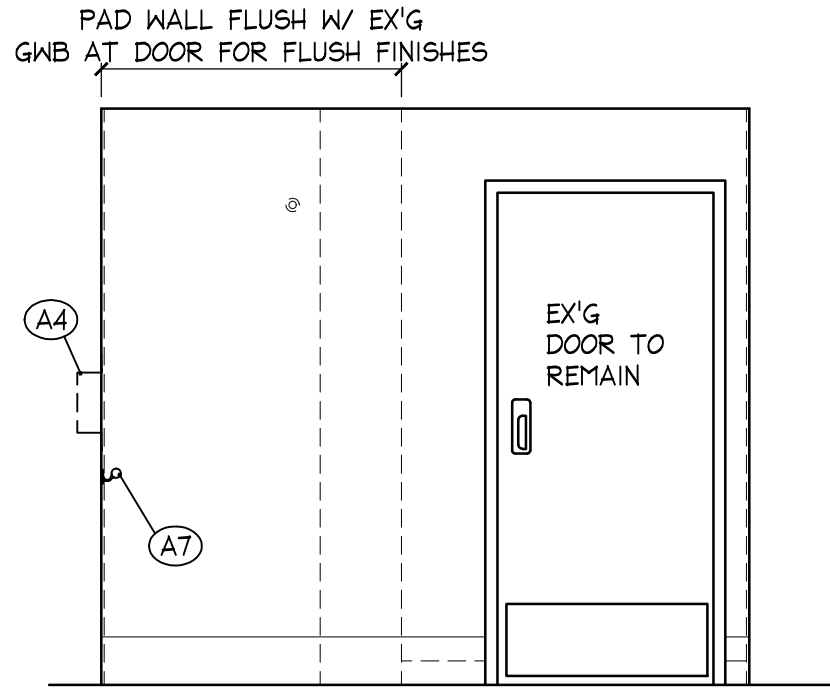
ELEV A

ROOM C302 INT. ELEVS

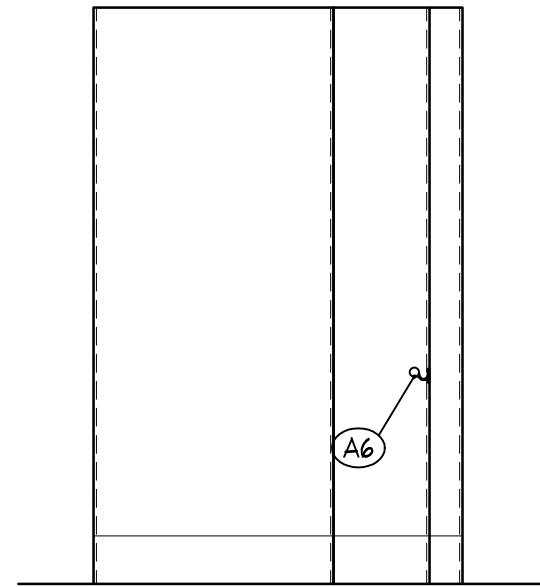
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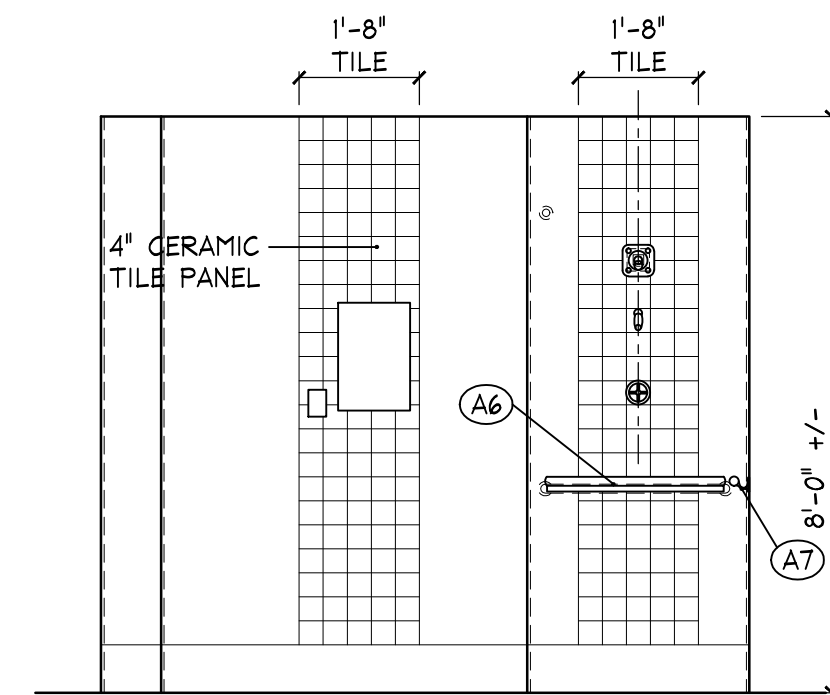
ELEV B



ELEV C



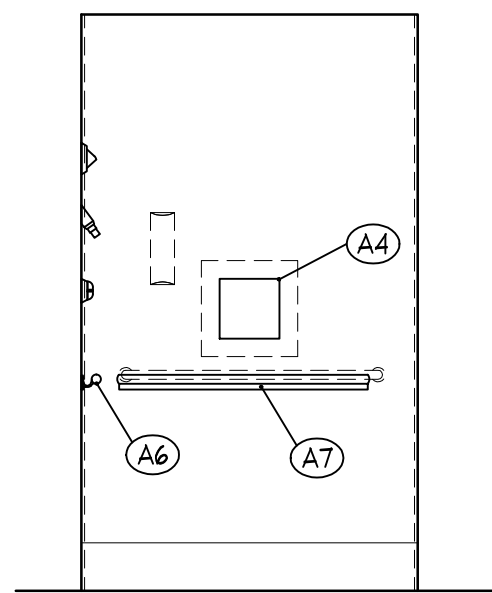
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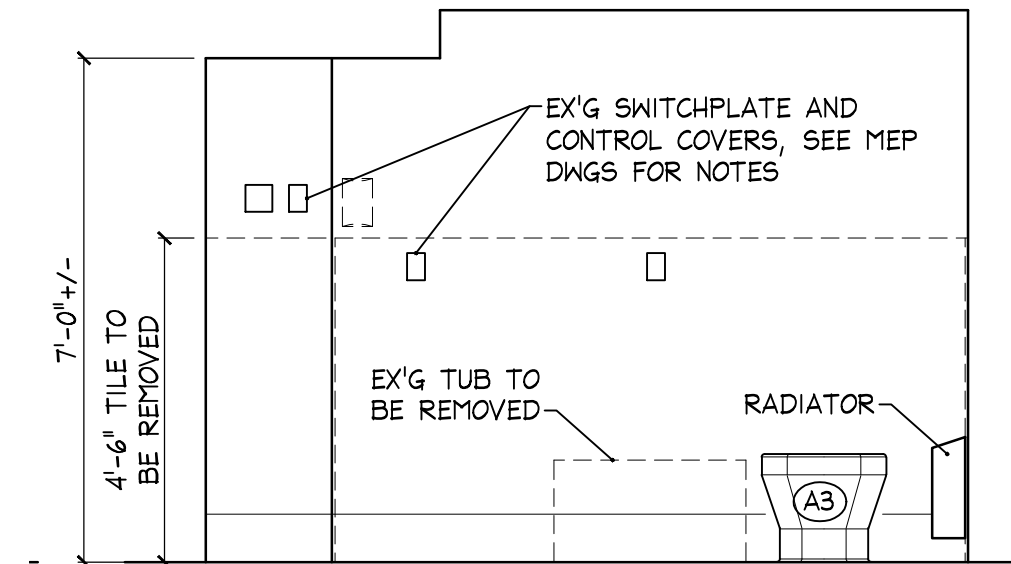
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ROOM C304 INT. ELEVS

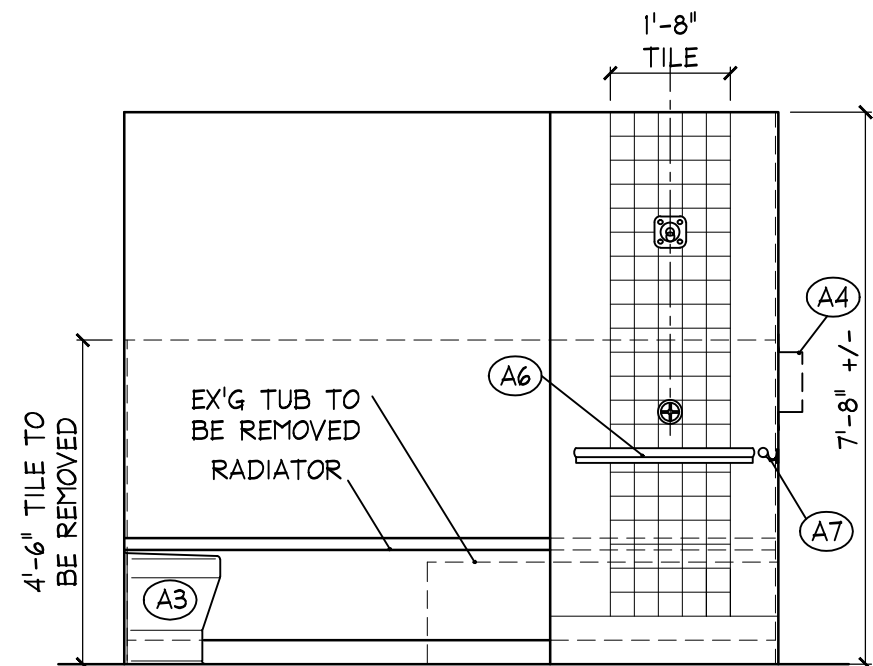
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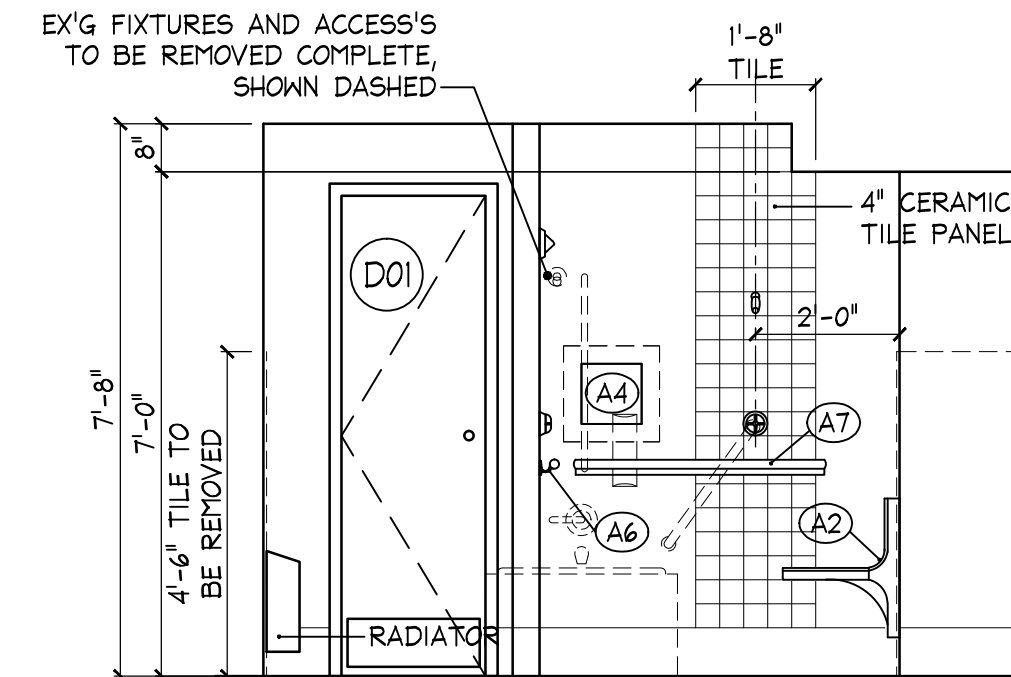
ELEV B



ELEV C



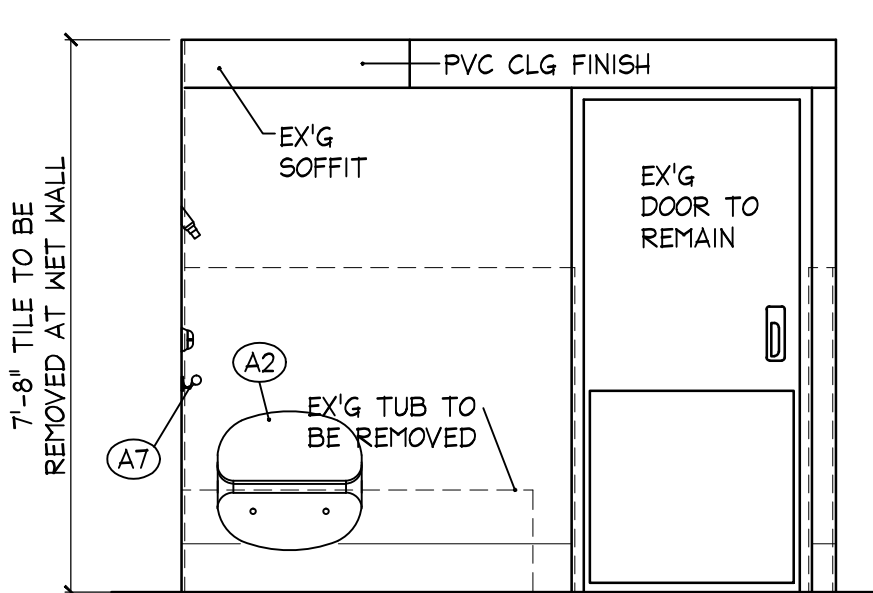
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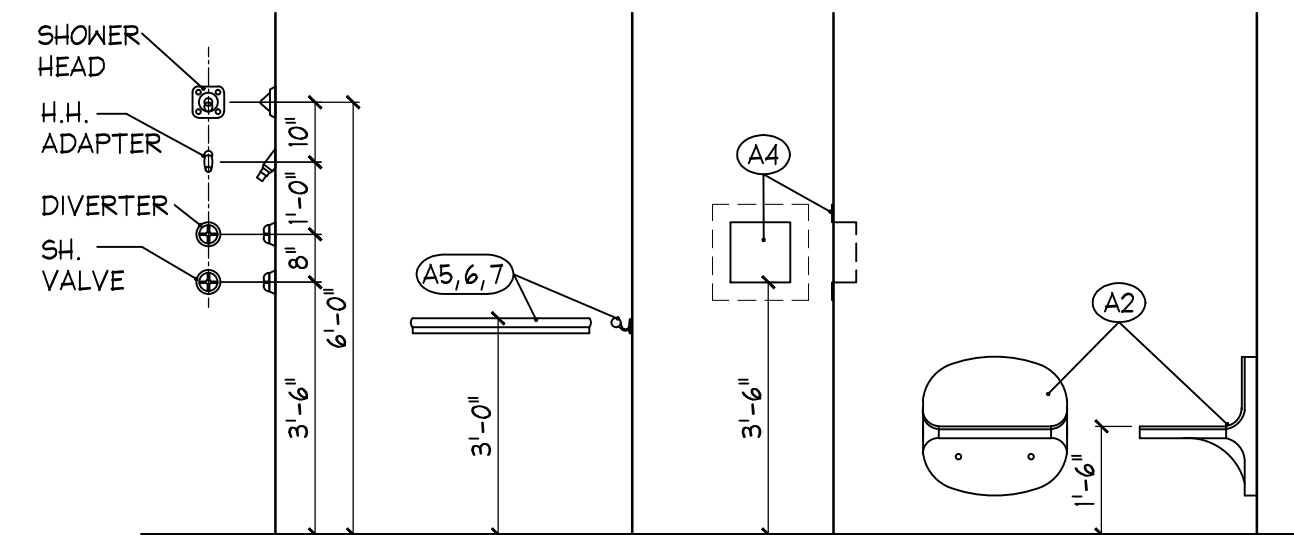
ELEV A

ROOM 357 INT. ELEVS

3/8"x1'-0"



ELEV B



SHOWER EQUIPMENT GRAB BARS RECESSED SHELF SHOWER SEAT

TYPICAL MOUNTING HEIGHTS

3/8"x1'-0"

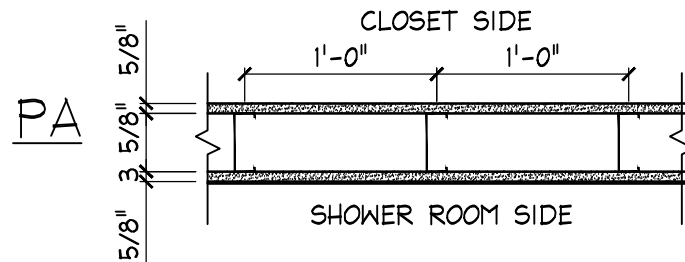
AT ALL SHOWER ROOMS:

1. REMOVE WALL AND COVE BASE TILE COMPLETE, FLOORING AND MORTAR BASE TO CONCRETE FLOOR. REMOVE EX'G EPOXY FLOOR AND SUBFLOOR TO CONC. FLOOR BELOW AT 302, 431
2. REMOVE SHOWER INSERTS, PLUMBING FIXTURES AND ACCESSORIES. COORDINATE W/ MEP, NOTE: VALVE BOXES TO REMAIN
3. REMOVE LIGHT FIXTURES, SUPPLY/EXHAUST GRILLS, OTHER CEILING FIXTURES AND EXISTING CEILING GYP. AS REQUIRED FOR INSTALLATION OF NEW WORK, COORDINATE WITH MEP
4. REMOVE EXISTING RADIATOR COVER, RELOCATE- REROUTE HEATING LINES, COORD. W/ MEP
5. REMOVE ALL CONTROLS AND PLATES FOR RE-INSTALLATION/RELOCATION
6. INSTALL NEW GYP. BD. SUBSTRATE OR PATCH/REPAIR WALLS FOR INSTALLATION OF NEW ALTRO WHITEROCK WALL COVERING EXCEPT AT PLUMBING
7. INSTALL CONCRETE BOARD AND WALL TILE AT PLUMBING
8. INSTALL NEW ANTI-LIG FIXTURES AND ACCESSORIES
9. INSTALL LINEAR DRAIN OUTSIDE SHOWER, SPOT DRAIN IN SHOWER
10. PREPARE FLOOR WITH NEW LEVELER WITH MAX. 1:50 SLOPE, PRIME AND INSTALL NEW EPOXY FLOORING WITH INTEGRAL 12" SANITARY COVE BASE
11. INSTALL NEW ANTI-LIG LIGHT FIXTURES, SUPPLY/EXHAUST GRILLS
12. PATCH/PAINT CEILING, INSTALL NEW PVC CEILING AT SHOWER AREAS AS SHOWN IN RCP
13. INSTALL BUILT-IN ANTI-LIG BENCH WHERE SHOWN

ACCESSORIES SCHEDULE

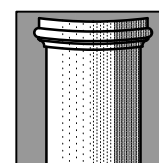
- A2 SHOWER SEAT: KINGSWAY KG28-GA MOLDED SHOWER SEAT
A3 SITE-BUILT SHOWER SEAT, SEE DETAILS
A4 ALTRO WHITEROCK INTEGRATED PVC 10" X 10" X 4" RECESSED SHELF
A5 24" ANTI LIGATURE GRAB BAR: KINGSWAY KG272 GRAB BAR
A6 30" ANTI LIGATURE GRAB BAR: KINGSWAY KG273 GRAB BAR
A7 42" ANTI LIGATURE GRAB BAR: KINGSWAY KG276 GRAB BAR

PARTITION TYPE



5/8" ABUSE AND MOLD RESISTANT GMB
3 3/8" 25 GA. STL. STUDS @ 12" O.C.
5/8" ABUSE AND MOLD RESISTANT GMB
HEAT WELDED SEMI-RIGID PVC WALL COVERING

E:\CONECO\DEPT OF MENTAL HEALTH\POCASSET MENTAL HEALTH CENTER\CROWLEY LOGO.JPG



The MZO GROUP
DESIGNERS ■ ARCHITECTS ■ PLANNERS
IN THE *MIQUELLE* TRADITION

335 Main Street, Suite 201 ■ Stoneham, Massachusetts 02180
Voice 781-279-4446 ■ Fax 781-279-4448 ■ E-Mail: mzo@mzogroup.com ■ www.mzogroup.com



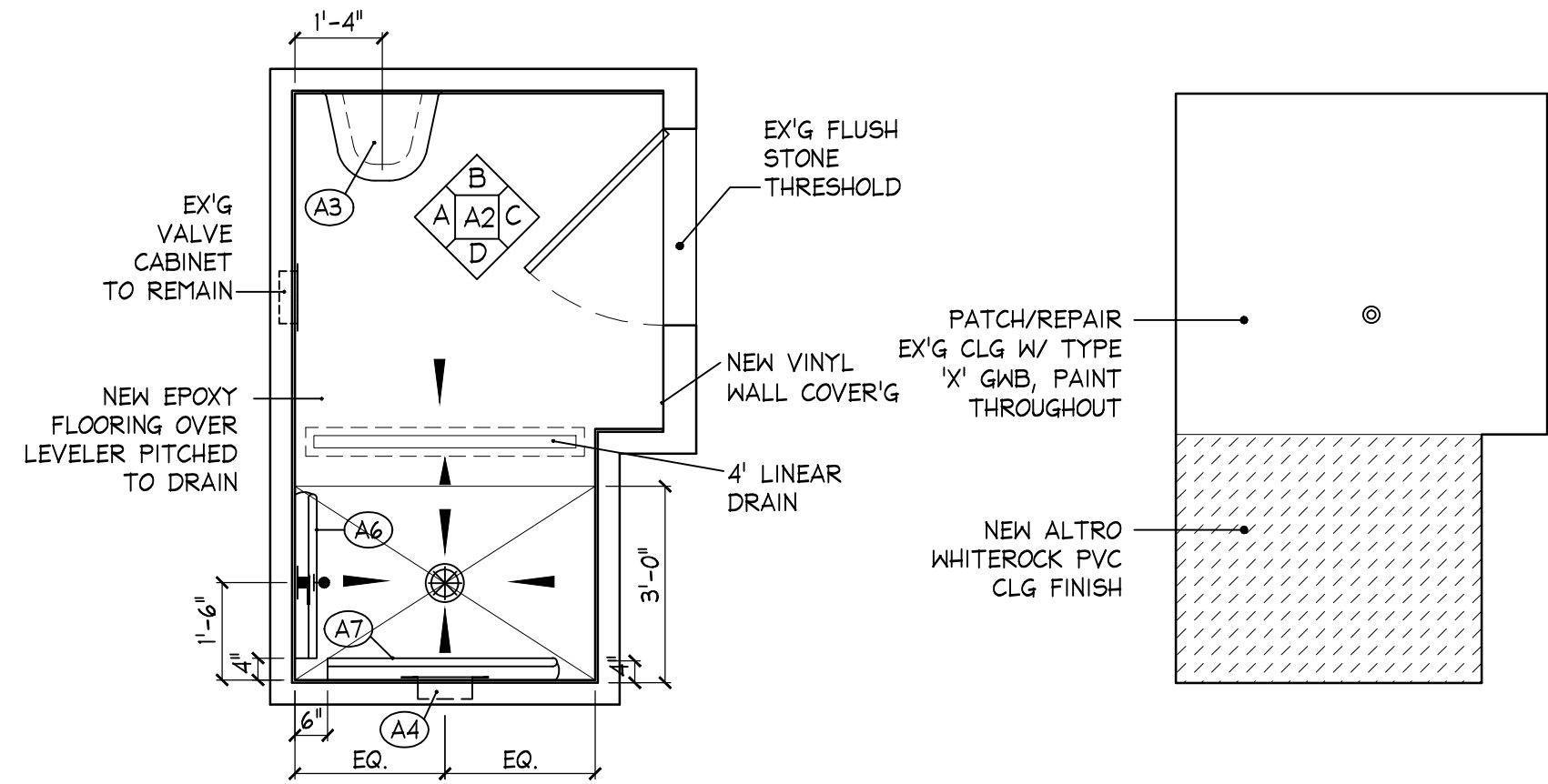
REVISIONS	DR/CK	DATE	DESCRIPTION

DEPARTMENT OF MENTAL HEALTH
167 LYMAN STREET
WESTBOROUGH, MA 01581
FLOOR PLANS AND INTERIOR
ELEVATIONS

2021-062
CAIN TAUNTON STATE HOSPITAL
60 HODGES AVE.
TAUNTON MA 02780
INPATIENT BATHROOM
RENOVATIONS PROJECT

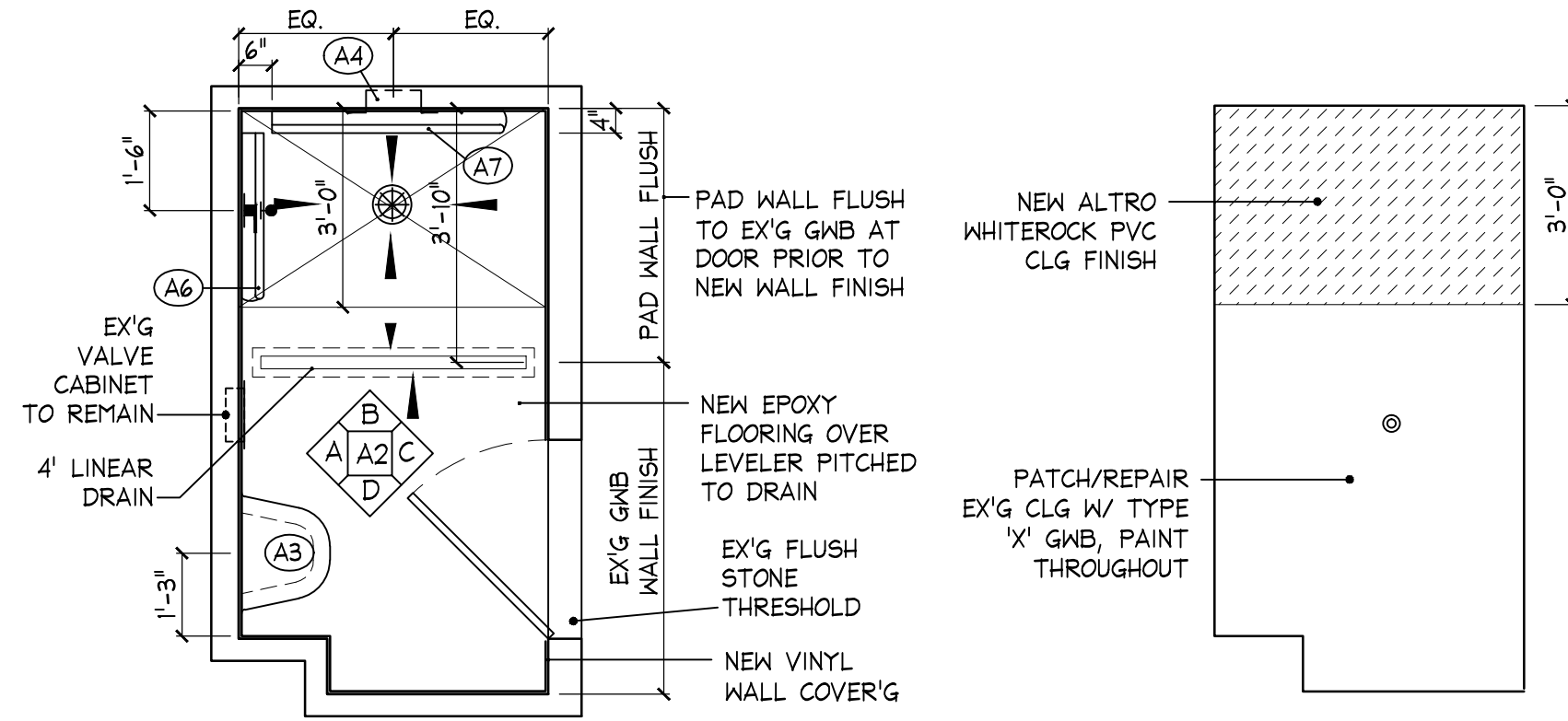
CONECO
Engineers, Scientists & Surveyors
4 FIRST STREET, BRIDGEWATER, MASSACHUSETTS 02324
PHONE 508-697-3191 OR 800-548-3385
FAX 508-697-5996
WEBSITE: www.coneco.com

DATE	03/02/2023
DESIGNED: XXX	CHECKED: XXX
DRAFTED: XXX	IN CHARGE: XXX
SCALE:	AS SHOWN
PROJECT NO.	7073
SHEET NO.	A1 OF ##



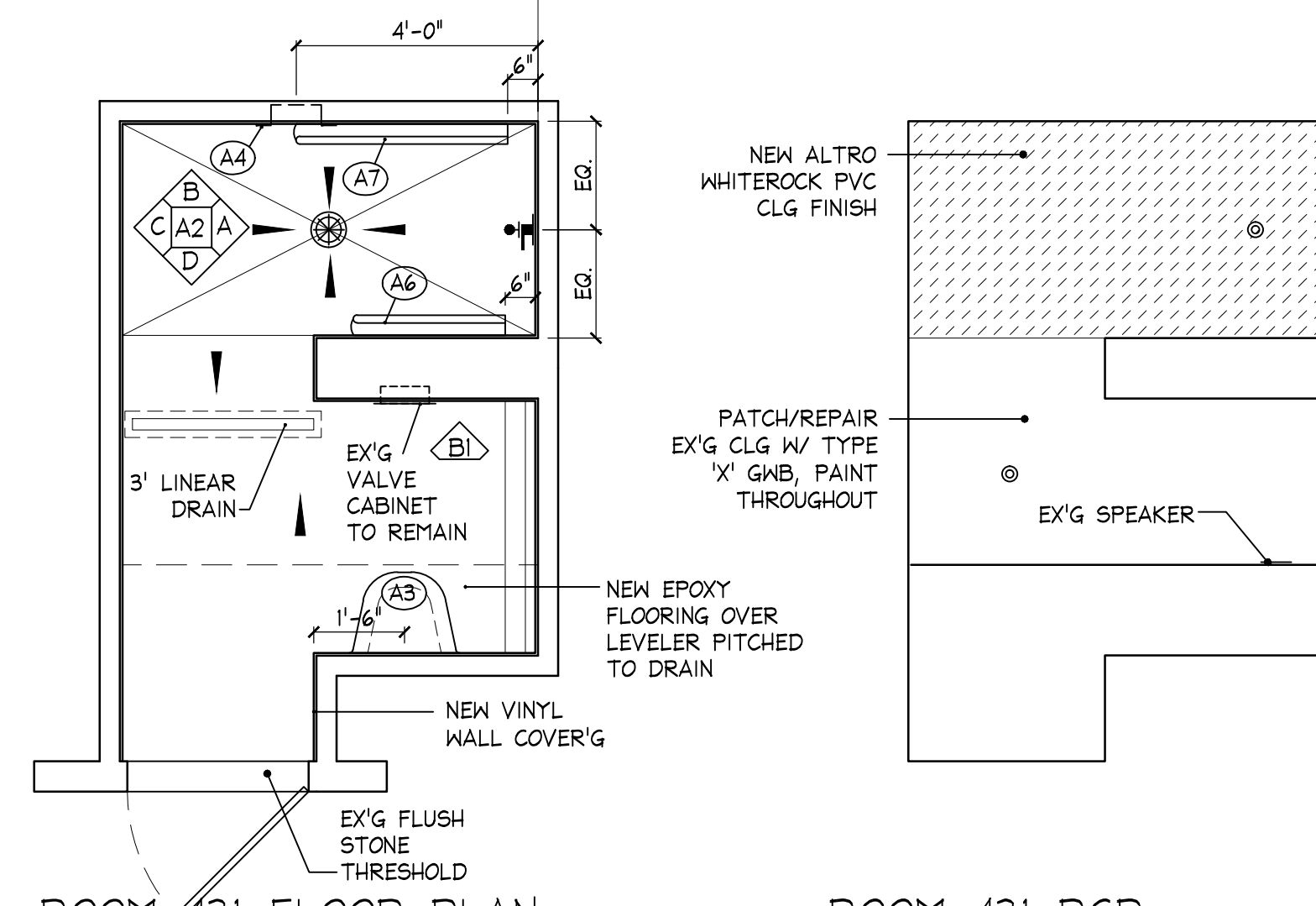
ROOM C402 FLOOR PLAN

ROOM C402 RCP



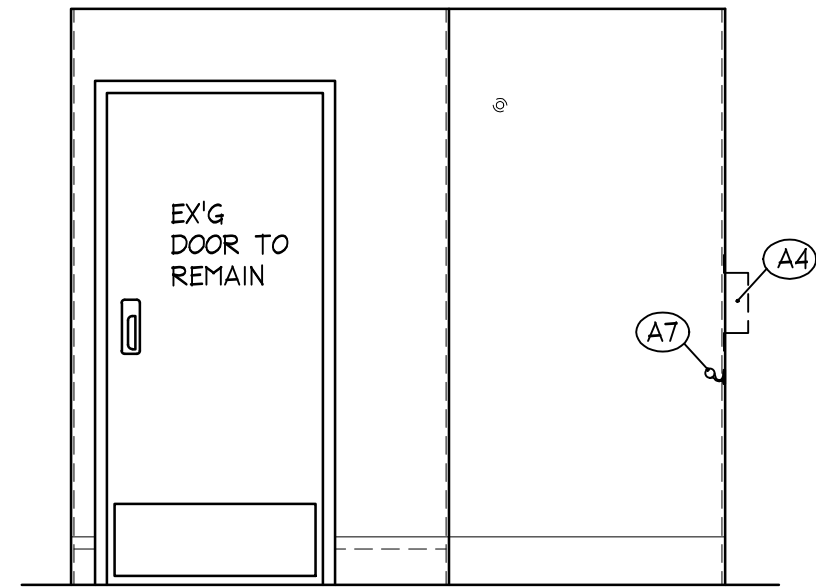
ROOM C404 FLOOR PLAN

ROOM C404 RCP

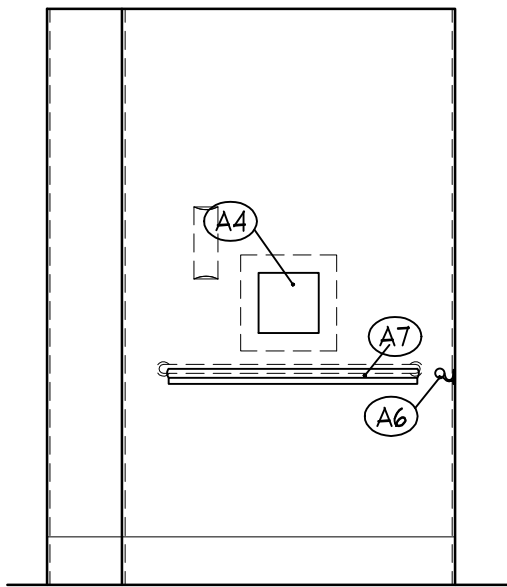


ROOM 431 FLOOR PLAN

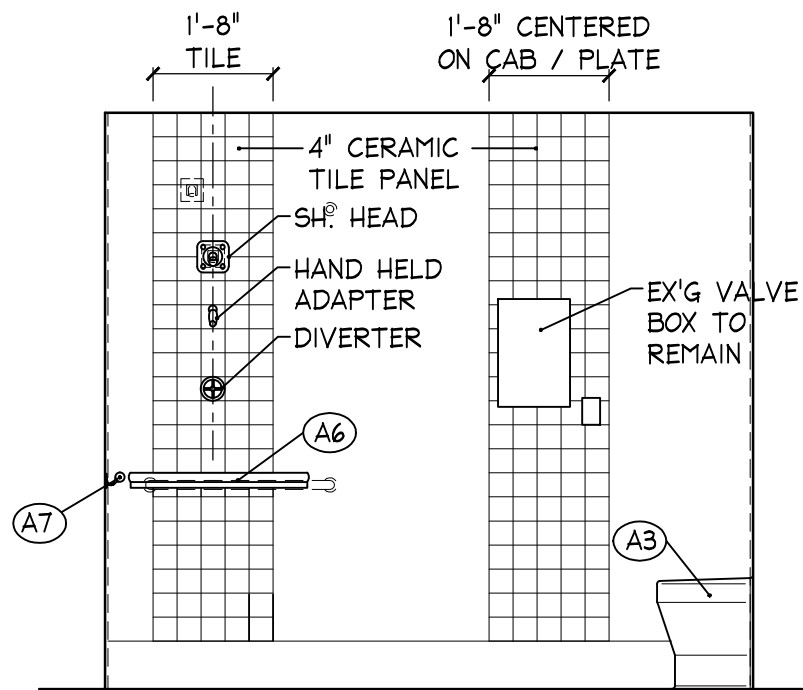
ROOM 431 RCP



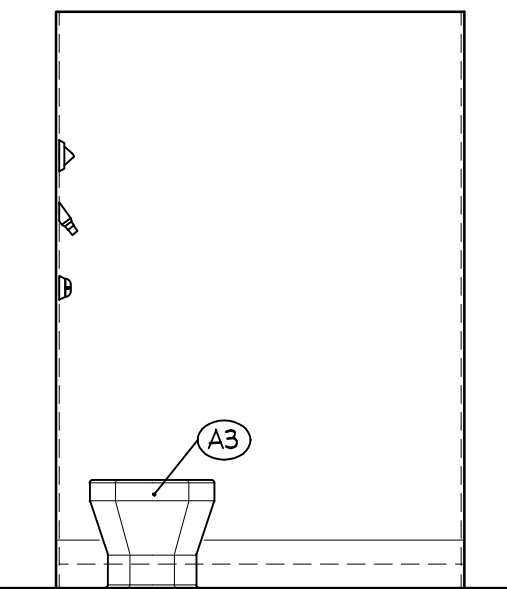
ELEV C



ELEV D

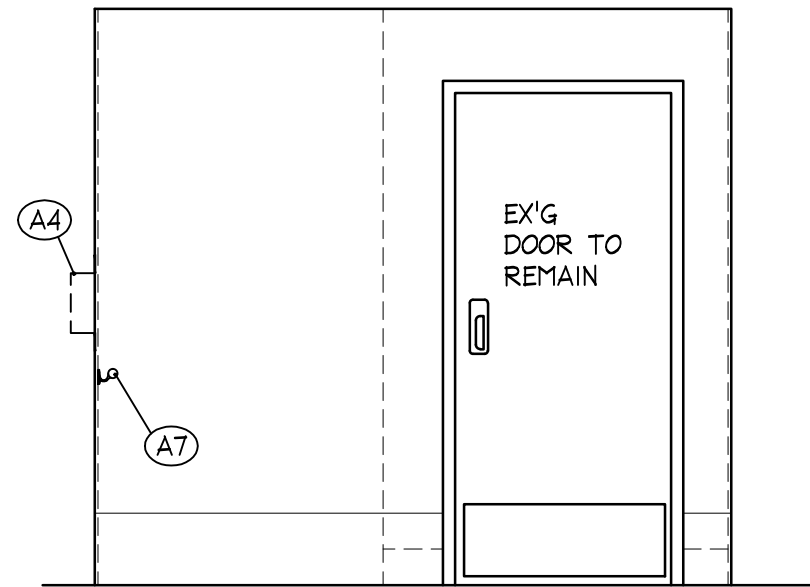


ELEV A

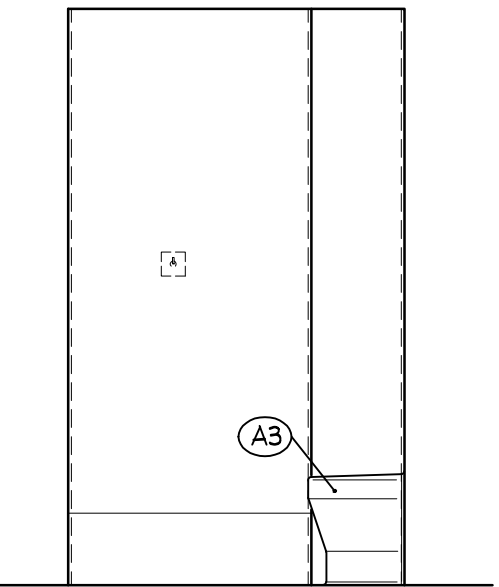


ELEV B

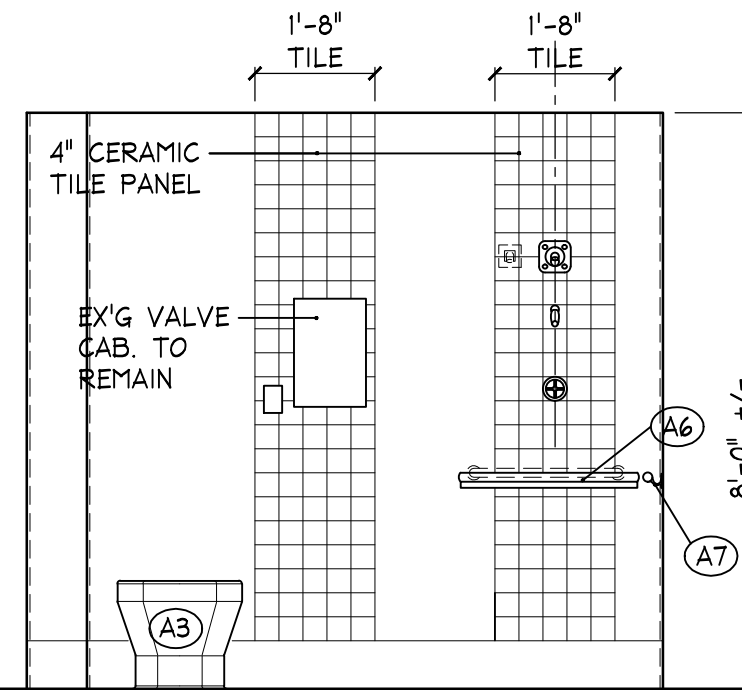
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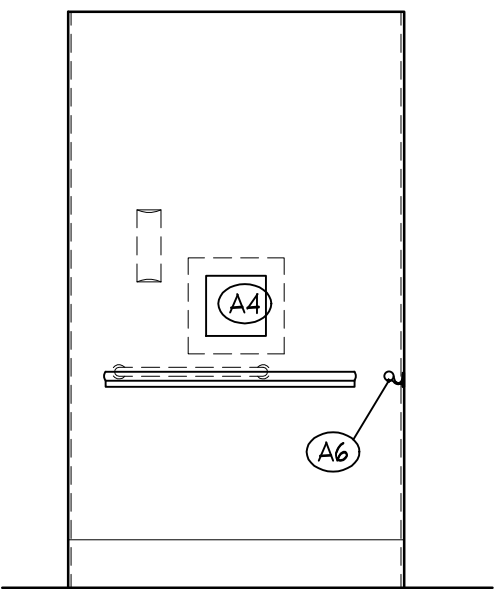
ELEV C



ELEV D

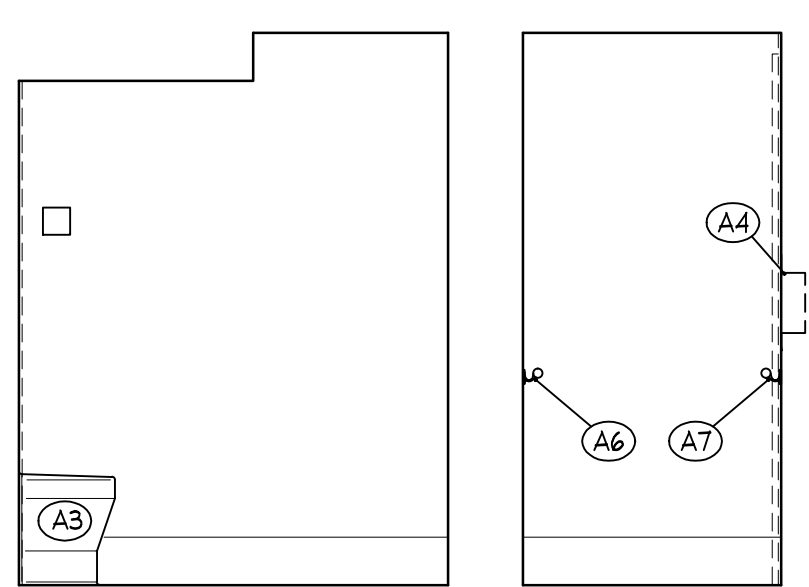


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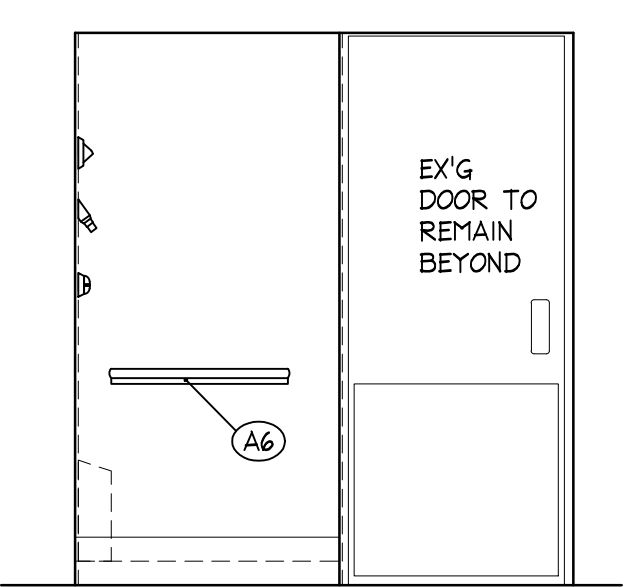


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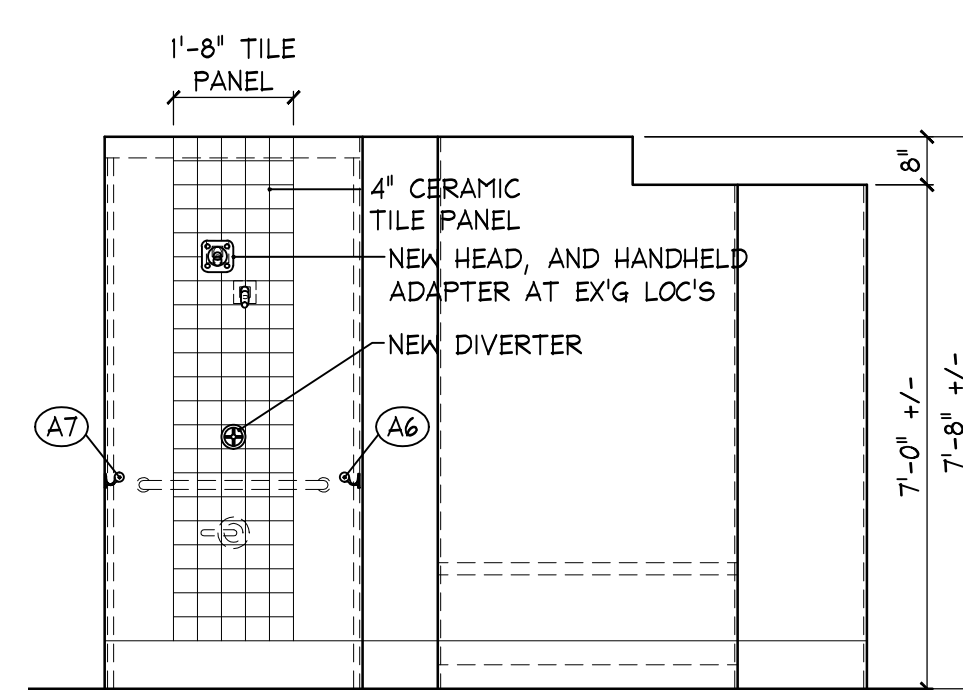
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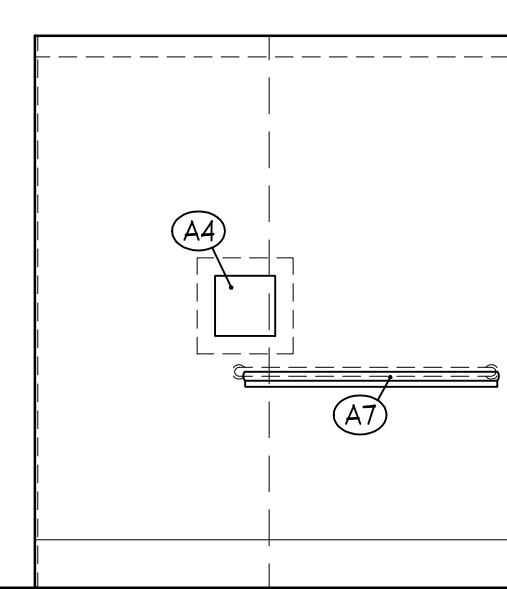
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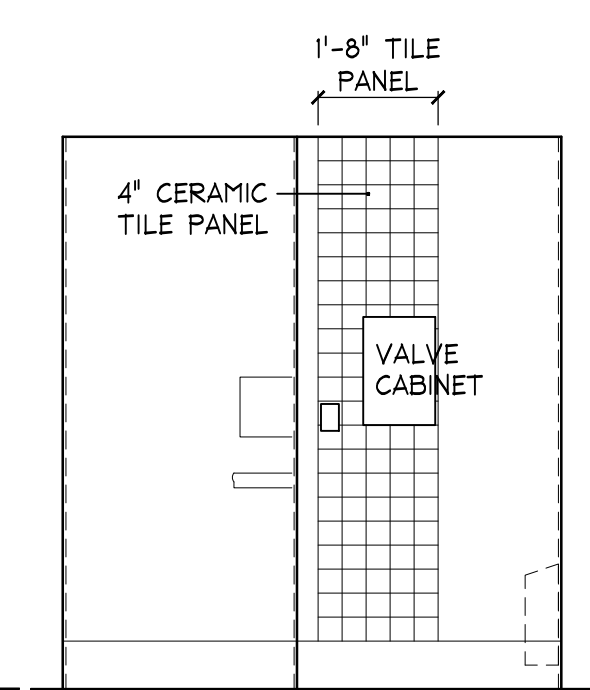
ELEV D



ELEV A



ELEV B



ELEV BI

ROOM 431 INT. ELEVS

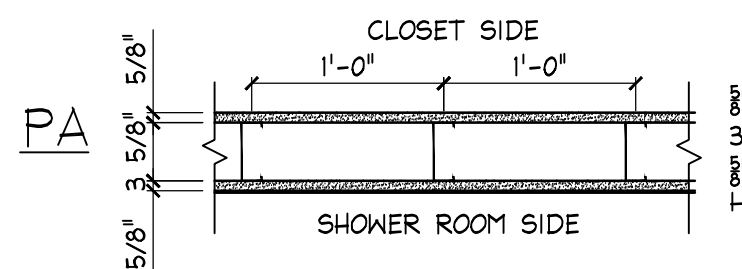
AT ALL SHOWER ROOMS:

1. REMOVE WALL AND COVE BASE TILE COMPLETE, FLOORING AND MORTAR BASE TO CONG. FLOOR BELOW AT 302, 431
2. REMOVE SHOWER INSERTS, PLUMBING FIXTURES AND ACCESSORIES. COORDINATE W/ MEP. NOTE: VALVE BOXES TO REMAIN
3. REMOVE LIGHT FIXTURES, SUPPLY/EXHAUST GRILLS, OTHER CEILING FIXTURES AND EXISTING CEILING GYP. AS REQUIRED FOR INSTALLATION OF NEW WORK, COORDINATE WITH MEP
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11. INSTALL NEW ANTI-LIG LIGHT FIXTURES, SUPPLY/EXHAUST GRILLS
12. PATCH/PAINT CEILING, INSTALL NEW PVC CEILING AT SHOWER AREAS AS SHOWN IN RCP
13. INSTALL BUILT-IN ANTI-LIG BENCH WHERE SHOWN

ACCESSORIES SCHEDULE

- A2 SHOWER SEAT: KINGSWAY KG28-GA MOLDED SHOWER SEAT
A3 SITE-BUILT SHOWER SEAT, SEE DETAILS
A4 ALTRO WHITEROCK INTEGRATED PVC 10" X 10" X 4" RECESSED SHELF
A5 24" ANTI LIGATURE GRAB BAR: KINGSWAY KG272 GRAB BAR
A6 30" ANTI LIGATURE GRAB BAR: KINGSWAY KG273 GRAB BAR
A7 42" ANTI LIGATURE GRAB BAR: KINGSWAY KG276 GRAB BAR

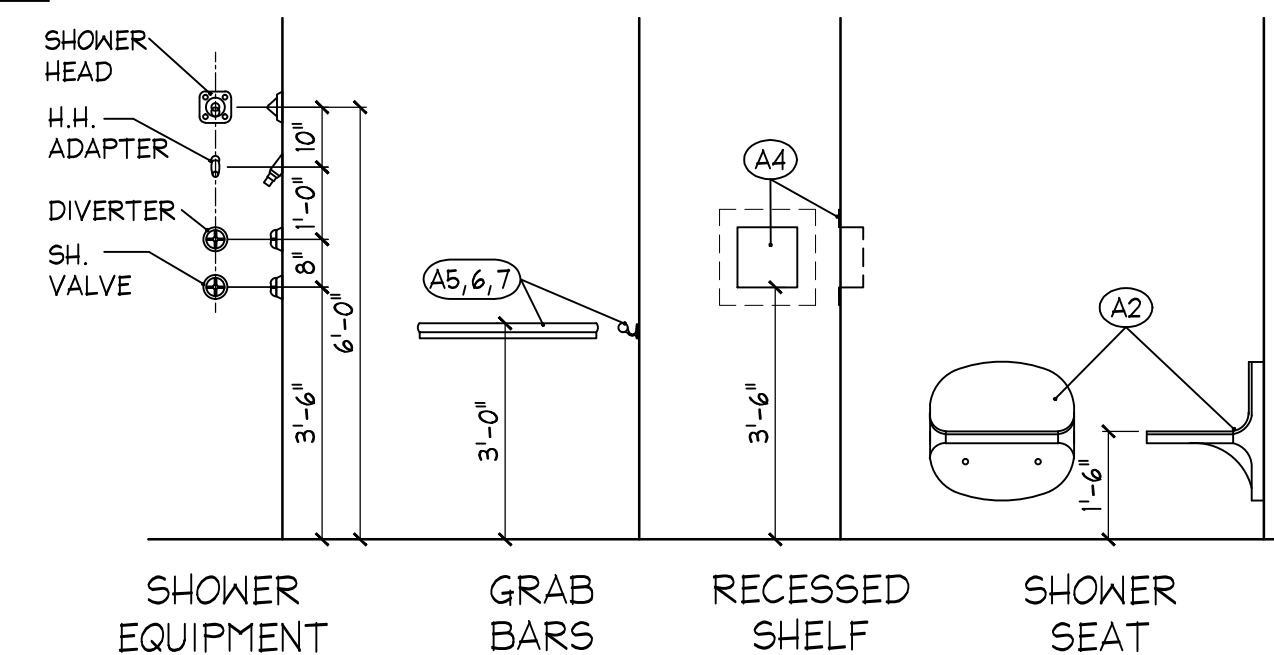
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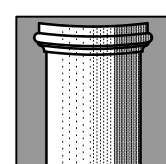
DOOR SCHEDULE								
NUMBER	SIZE	TYPE	MATERIAL	GLASS/PANEL	THICK	FRAME	FINISH	HARDWARE
D01	2'-0" X 6'-8"	SWING	REINFORCED CORE STEEL	FLUSH	1 3/4"	14 GA WELDED STL	PAINT	SEE NOTES, CONT. HINGE, LOCK, KICKPLATE

DOOR & HARDWARE NOTES:

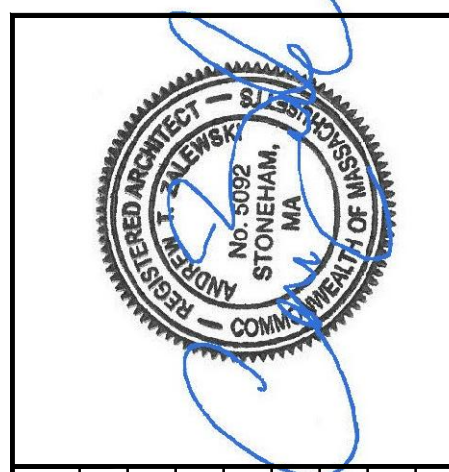
1. ALL DOORS TO BE 1 3/4" THICK SEAMLESS, WELDED STEEL, WITH REINFORCED STILE FOR CONTINUOUS HINGE INSTALLATION
2. HARDWARE AND FINISHES TO BE SUBMITTED FOR APPROVAL: KINGSWAY KG200 ANTI-LIGATURE CONTINUOUS HINGE, ROCKWOOD K1062 HEAVY DUTY .062" STAINLESS STEEL KICKPLATE FOR SHOWER ROOM SIDE
3. HARDWARE TO HAVE TAMPER RESISTANT FASTENERS/SECURITY FASTENERS
4. HARDWARE TO HAVE BRUSHED STAINLESS FINISH, US32D, OR AS SELECTED BY OWNER
5. FRAMES TO HAVE MIN. 3 ANCHORS PLUS FLOOR ANCHORS
6. DOOR FRAMES TO HAVE BUMPERS/SILENCERS



TYPICAL MOUNTING HEIGHTS



The MZO GROUP
DESIGNERS ■ ARCHITECTS ■ PLANNERS
IN THE *MIQUELLE* TRADITION



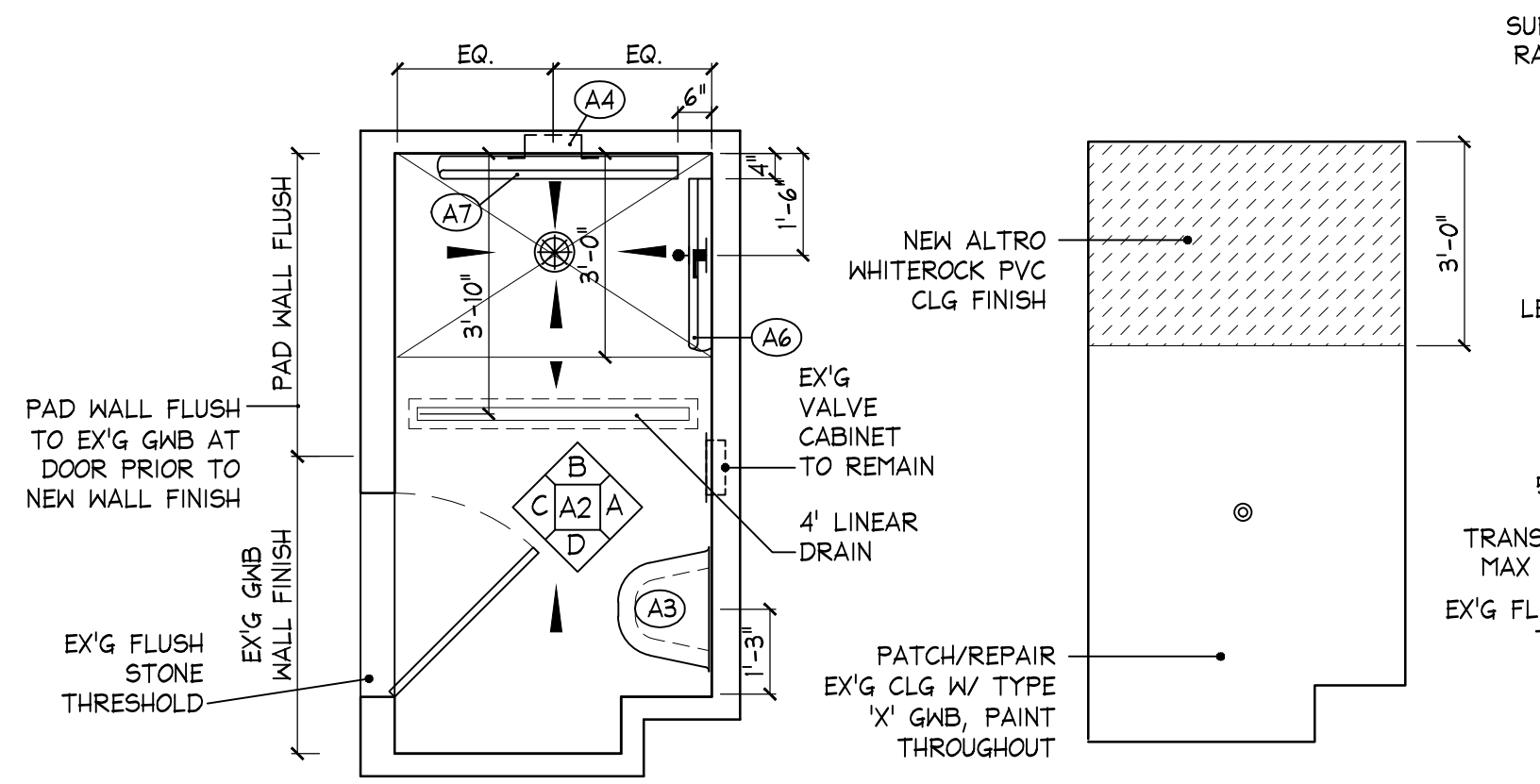
NO.	DATE	REVISIONS	DESCRIPTION	DR/CK

DEPARTMENT OF MENTAL HEALTH
167 LYMAN STREET
WESTBOROUGH, MA 01581
FLOOR PLANS AND INTERIOR ELEVATIONS

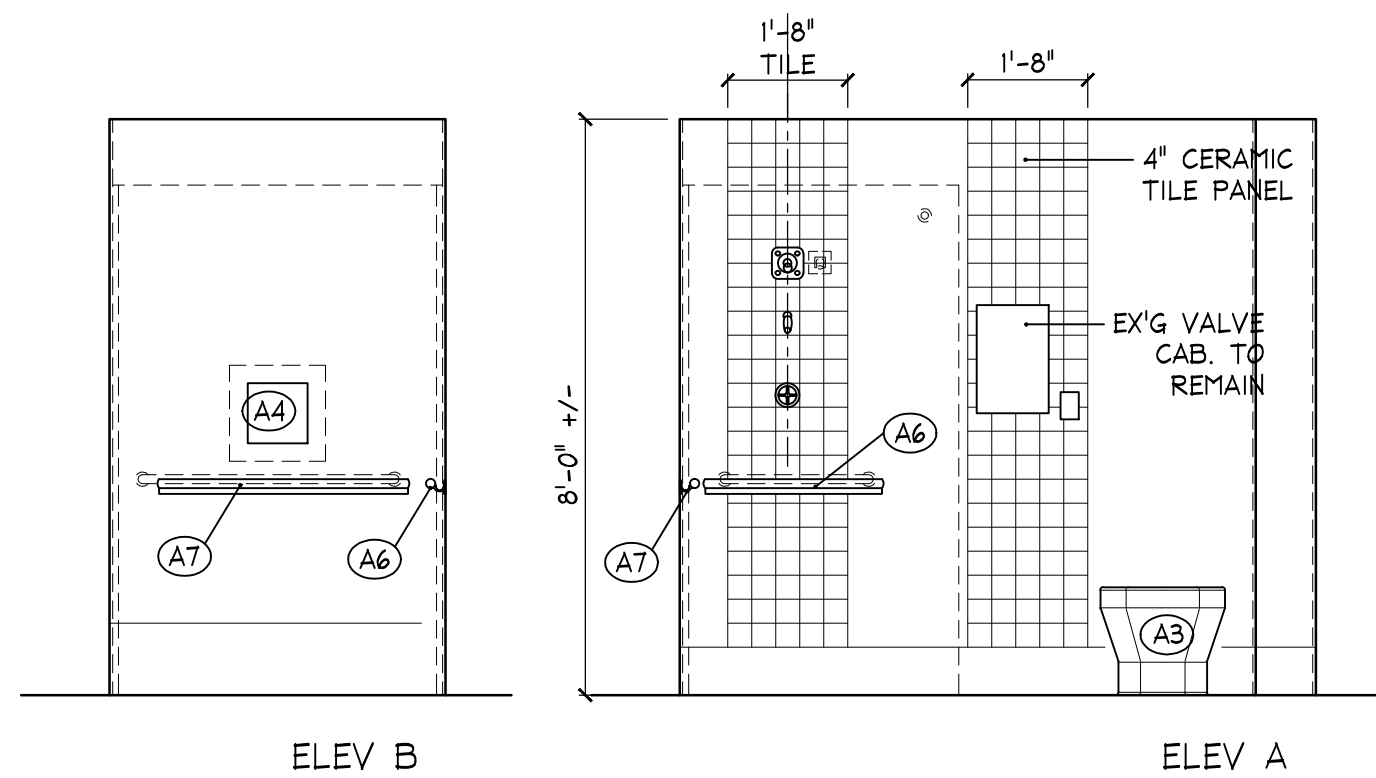
2021-062
CAIN TAUNTON STATE HOSPITAL
60 HODGES AVE.
TAUNTON MA 02760
INPATIENT BATHROOM RENOVATIONS PROJECT

CONECO
Engineers, Scientists & Surveyors
4 FIRST STREET, BRIDGEWATER, MASSACHUSETTS 02224
PHONE 508-697-3191 OR 800-548-3355 FAX 508-697-5996
WEBSITE: www.coneco.com

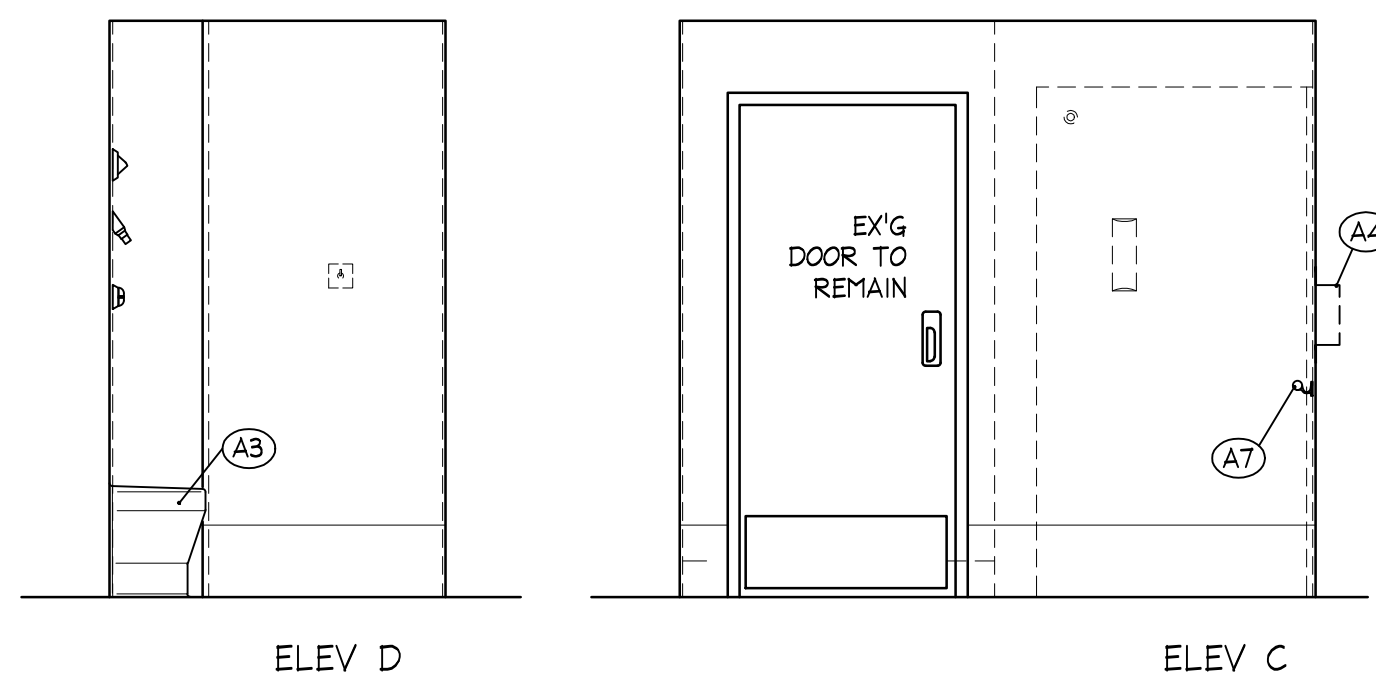
DATE	03/02/2023
DESIGNED: XXX	CHECKED: XXX
DRAFTED: XXX	IN CHARGE: XXX
SCALE:	AS SHOWN
PROJECT NO.	7073
SHEET NO.	A2 OF ##



ROOM C435 FLOOR PLAN ROOM C435 RCP



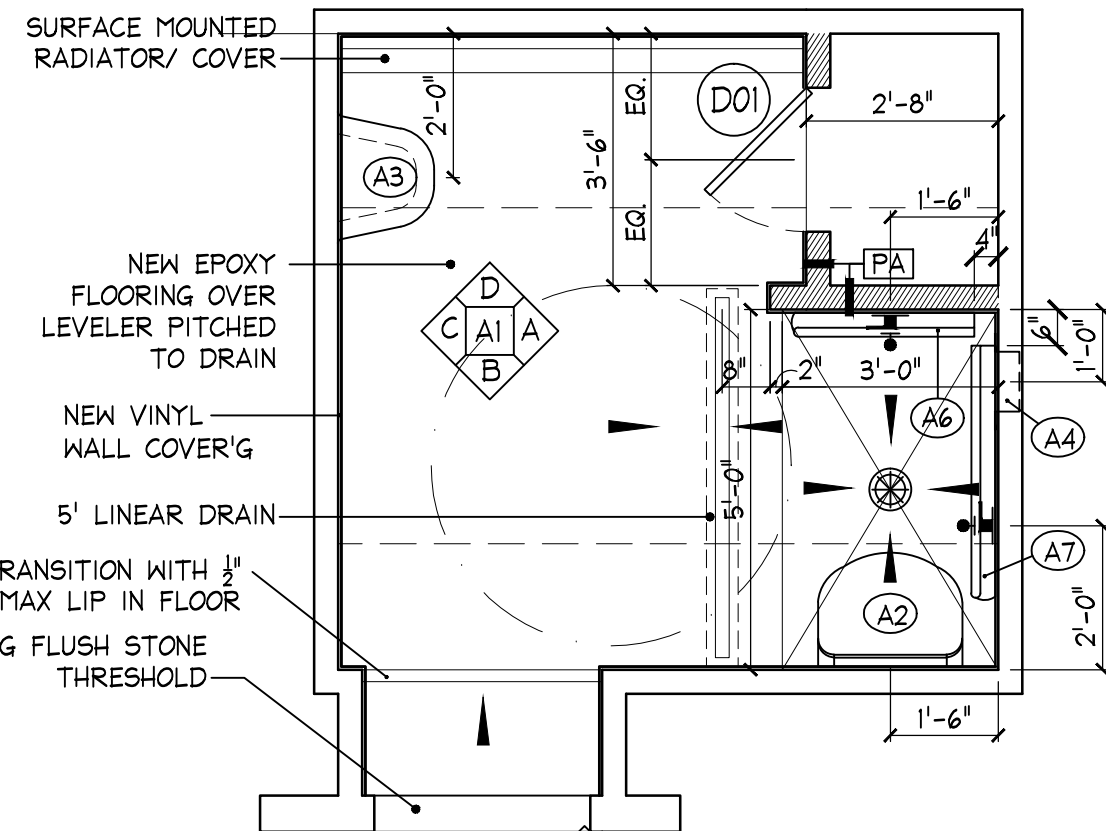
ELEV B ELEV A



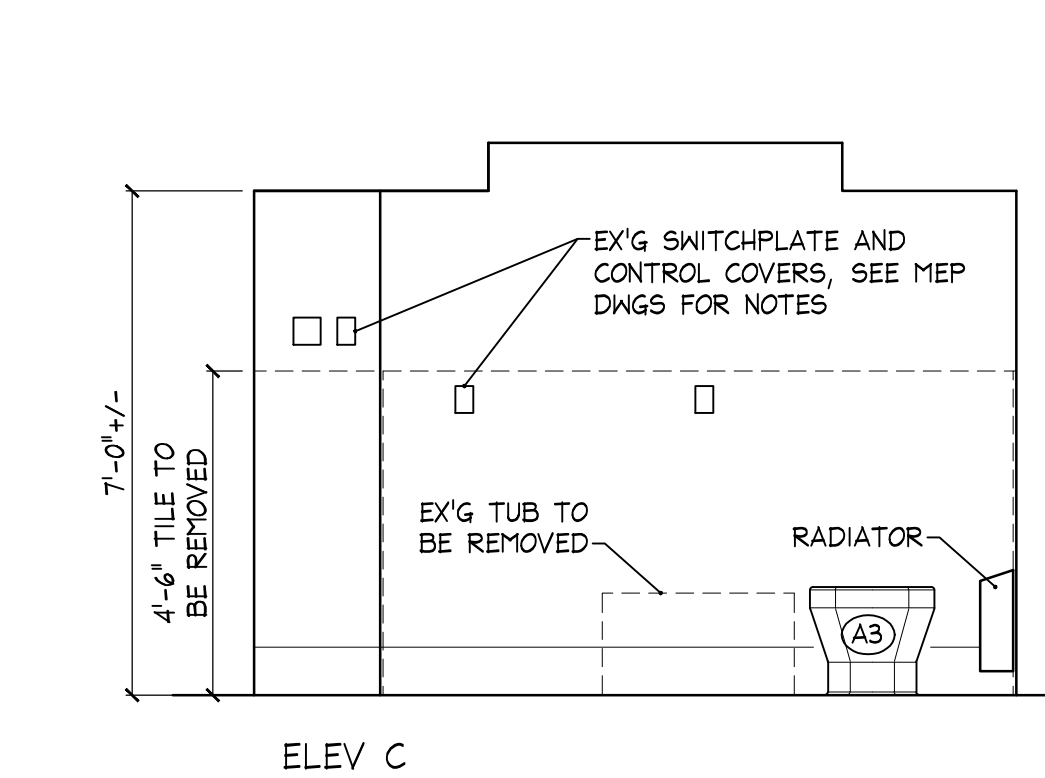
ELEV D ELEV C

ROOM C435 INT. ELEV'S

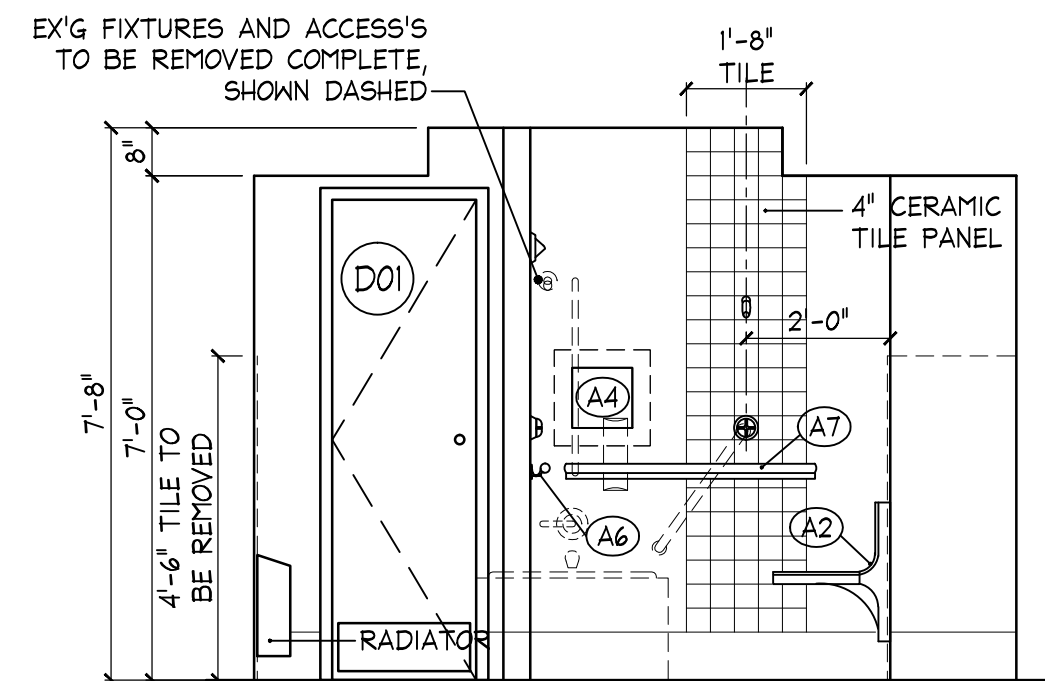
3/8"=1'-0"



ROOM 457 FLOOR PLAN



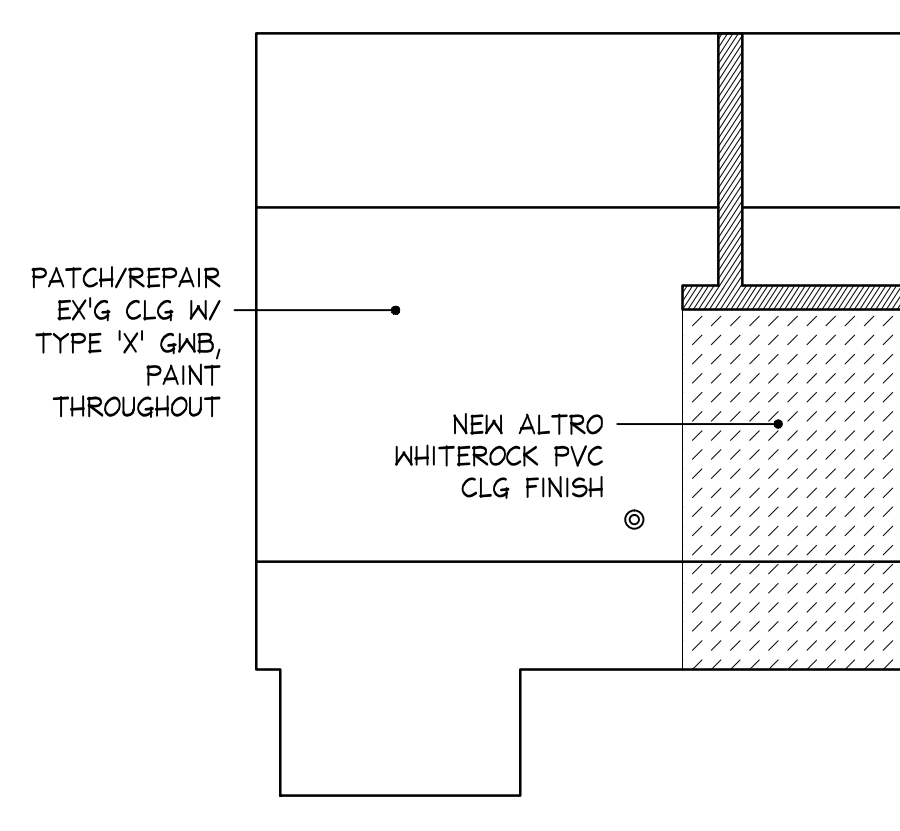
ELEV C



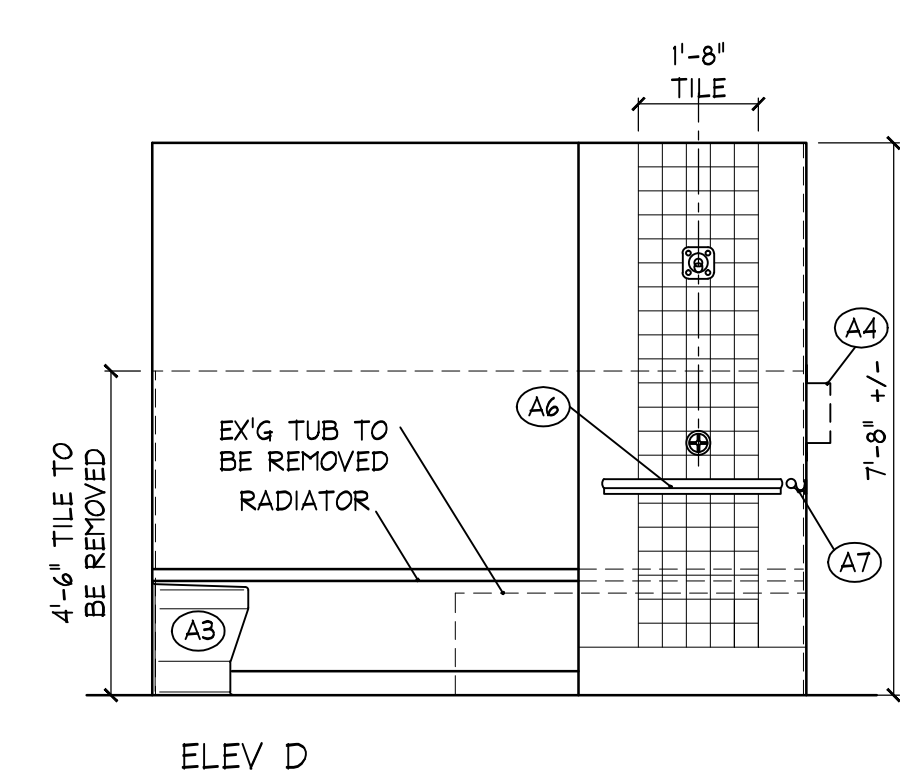
ELEV A

ROOM 457 INT. ELEV'S

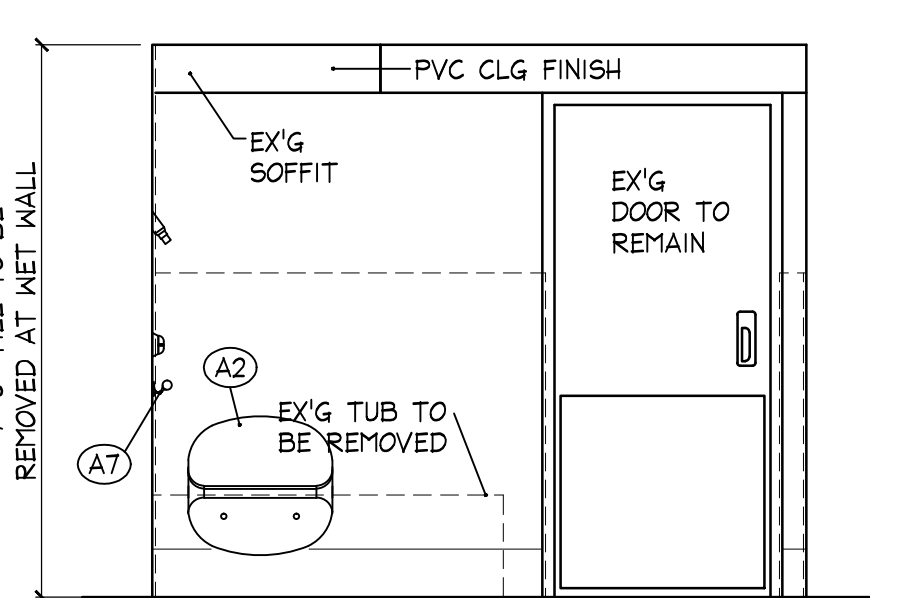
3/8"=1'-0"



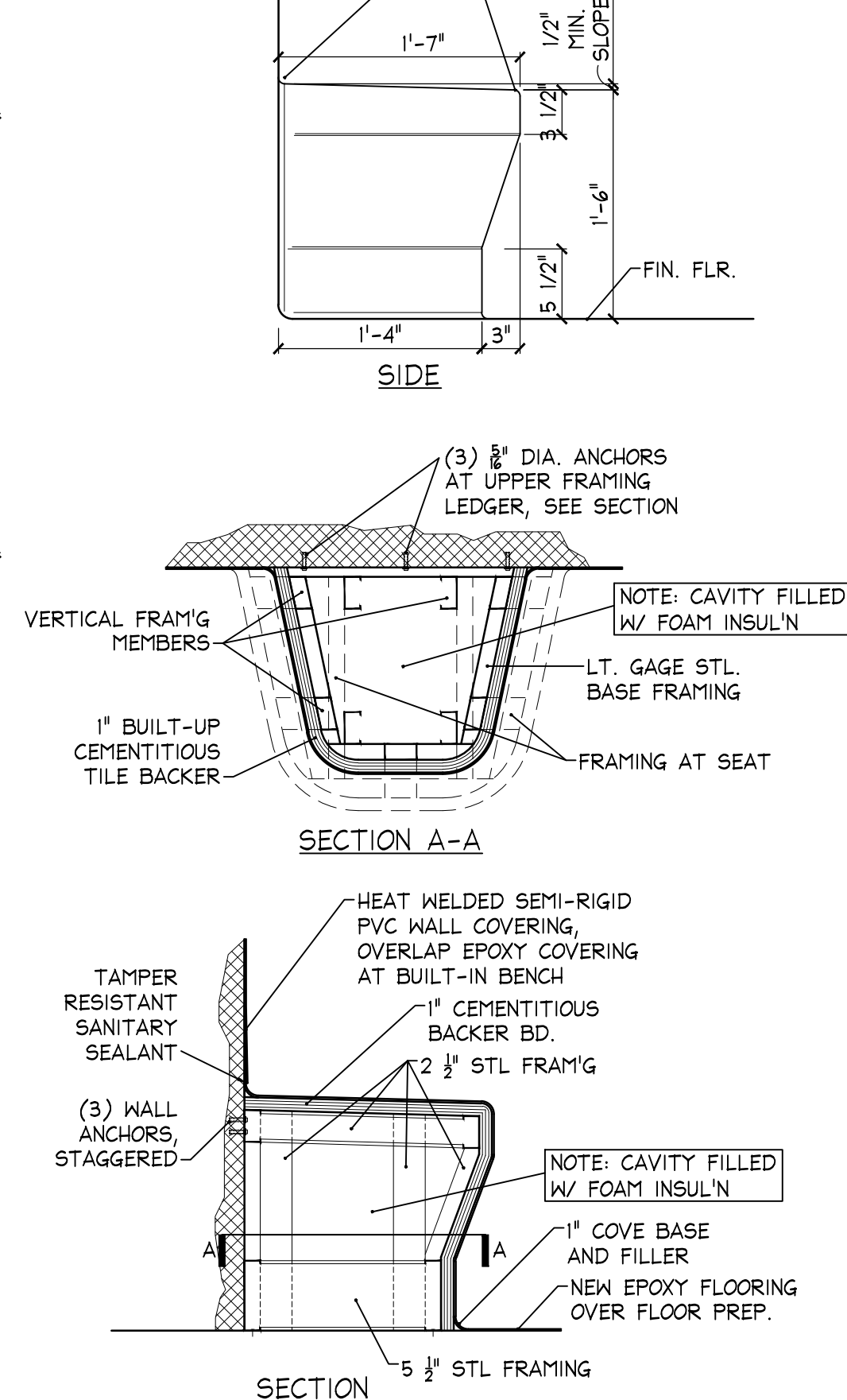
ROOM 457 RCP



ELEV D



ELEV B



SITE-BUILT SHOWER SEAT

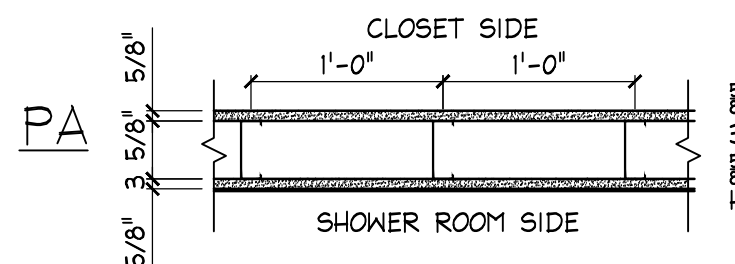
1" = 1'-0"

DOOR SCHEDULE									
NUMBER	SIZE	TYPE	MATERIAL	GLASS/PANEL	THICK	FRAME	FINISH	HARDWARE	REMARKS
D01	2'-0" X 6'-8"	SWING	REINFORCED CORE STEEL	FLUSH	1 3/4"	14 GA WELDED STL	PAINT	SEE NOTES, CONT. HINGE, LOCK, KICKPLATE	

DOOR # HARDWARE NOTES:

- ALL DOORS TO BE 1 3/4" THICK SEAMLESS, WELDED STEEL, WITH REINFORCED STILE FOR CONTINUOUS HINGE INSTALLATION
- HARDWARE AND FINISHES TO BE SUBMITTED FOR APPROVAL: KINGSWAY KG200 ANTI-LIGATURE CONTINUOUS HINGE, ROCKWOOD K1062 HEAVY DUTY .062" STAINLESS STEEL KICKPLATE FOR SHOWER ROOM SIDE
- HARDWARE TO HAVE TAMPER RESISTANT FASTENERS/SECURITY FASTENERS
- HARDWARE TO HAVE BRUSHED STAINLESS FINISH, US32D, OR AS SELECTED BY OWNER
- FRAMES TO HAVE MIN. 3 ANCHORS PLUS FLOOR ANCHORS
- DOOR FRAMES TO HAVE BUMPERS/SILENCERS

PARTITION TYPE



PA

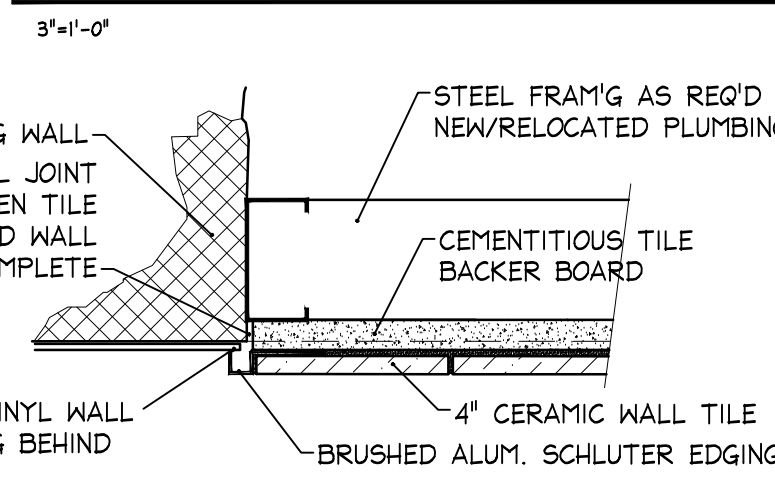
AT ALL SHOWER ROOMS:

- REMOVE WALL AND COVE BASE TILE COMPLETE, FLOORING AND MORTAR BASE TO CONCRETE FLOOR. REMOVE EX'G EPOXY FLOOR AND SUBFLOOR TO CONC. FLOOR BELOW AT 302, 431
- REMOVE SHOWER INSERTS, PLUMBING FIXTURES AND ACCESSORIES. COORDINATE W/ MEP, NOTE: VALVE BOXES TO REMAIN
- REMOVE LIGHT FIXTURES, SUPPLY/EXHAUST GRILLS, OTHER CEILING FIXTURES AND EXISTING CEILING GYP. AS REQUIRED FOR INSTALLATION OF NEW WORK, COORDINATE WITH MEP
- REMOVE EXISTING RADIATOR COVER, RELOCATE- REROUTE HEATING LINES, COORD. W/ MEP
- REMOVE ALL CONTROLS AND PLATES FOR RE-INSTALLATION/RELOCATION
- INSTALL NEW GYP. BD. SUBSTRATE OR PATCH/REPAIR WALLS FOR INSTALLATION OF NEW ALTRO WHITEROCK WALL COVERING EXCEPT AT PLUMBING
- INSTALL CONCRETE BOARD AND WALL TILE AT PLUMBING
- INSTALL NEW ANTI-LIG FIXTURES AND ACCESSORIES
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- INSTALL NEW ANTI-LIG LIGHT FIXTURES, SUPPLY/EXHAUST GRILLS
- PATCH/PAINT CEILING, INSTALL NEW PVC CEILING AT SHOWER AREAS AS SHOWN IN RCP
- INSTALL BUILT-IN ANTI-LIG BENCH WHERE SHOWN

ACCESSORIES SCHEDULE

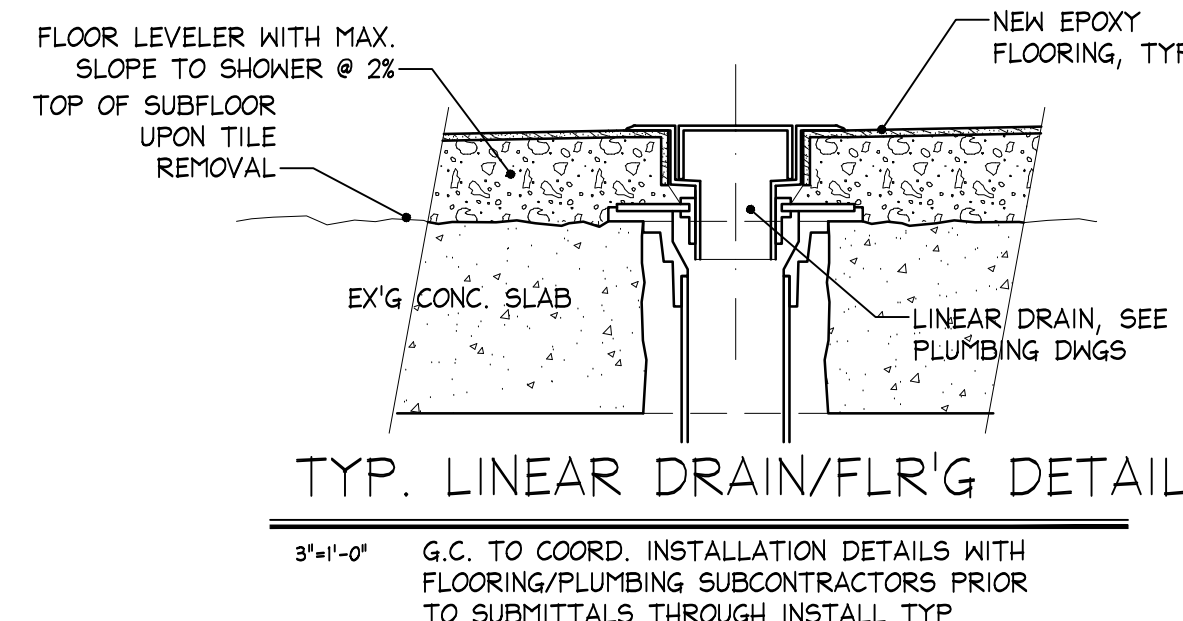
- SHOWER SEAT: KINGSWAY KG28-GA MOLDED SHOWER SEAT
- SITE-BUILT SHOWER SEAT, SEE DETAILS
- ALTRO WHITEROCK INTEGRATED PVC 10" X 10" X 4" RECESSED SHELF
- 24" ANTI LIGATURE GRAB BAR: KINGSWAY KG272 GRAB BAR
- 30" ANTI LIGATURE GRAB BAR: KINGSWAY KG273 GRAB BAR
- 42" ANTI LIGATURE GRAB BAR: KINGSWAY KG276 GRAB BAR

1- TYP. NEW WALL CORNER DETAIL



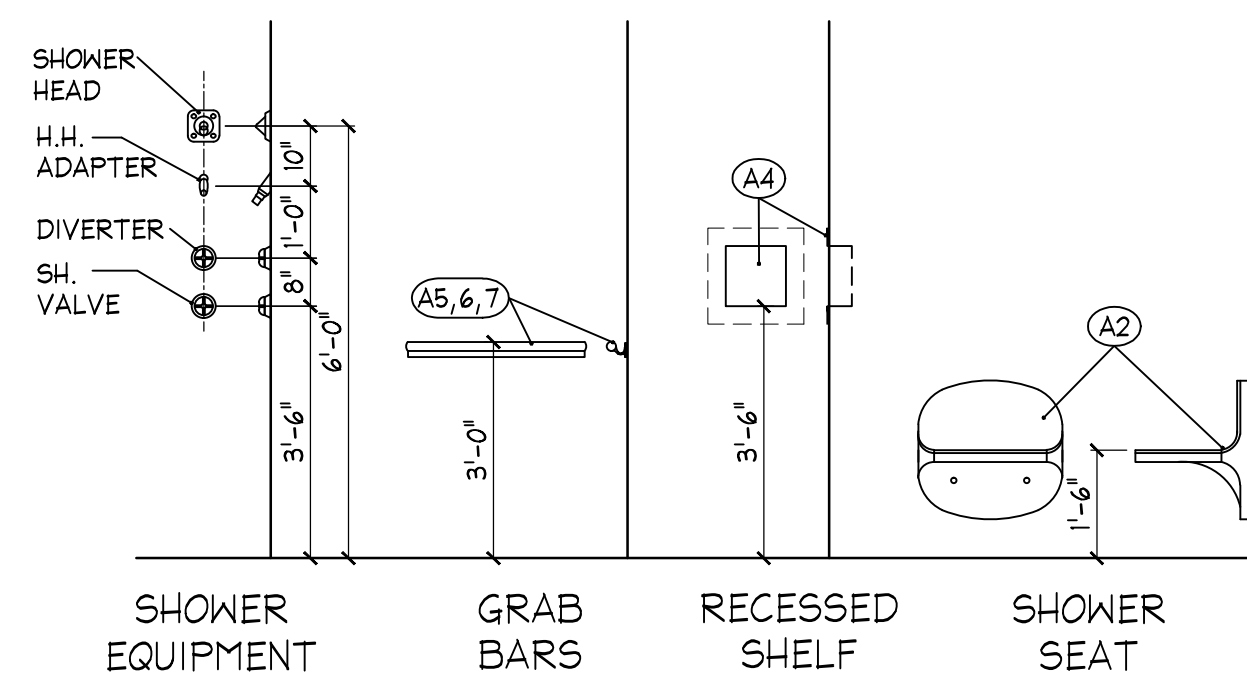
2 - TYP. NEW WALL CORNER DETAIL

3'-0"=1'-0"



TYP. SPOT DRAIN DETAIL

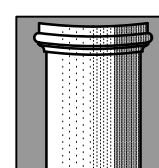
3'-0"=1'-0"



TYPICAL MOUNTING HEIGHTS

3/8"=1'-0"

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The MZO GROUP
DESIGNERS ■ ARCHITECTS ■ PLANNERS
IN THE *MIQUELLE* TRADITION

335 Main Street, Suite 201 ■ Stoneham, Massachusetts 02180
Voice 781-279-4446 ■ Fax 781-279-4448 ■ E-Mail: mzo@mzogroup.com ■ www.mzogroup.com



REVISIONS	DESCRIPTION	DATE	NO.

DEPARTMENT OF MENTAL HEALTH
167 LYMAN STREET
WESTBOROUGH, MA 01581
PROJECT: 2021-062
CAIN TAUNTON STATE HOSPITAL
60 HODGES AVE.
TAUNTON MA 02760
PREPARED FOR: INPATIENT BATHROOM RENOVATIONS PROJECT
DRAWING: FLOOR PLANS AND INTERIOR ELEVATIONS AND DETAILS
PLAN SET

2021-062
CAIN TAUNTON STATE HOSPITAL
60 HODGES AVE.
TAUNTON MA 02760
PROJECT: INPATIENT BATHROOM RENOVATIONS PROJECT
PLAN SET

CONECO
Engineers, Scientists & Surveyors
4 FIRST STREET, BRIDGEWATER, MASSACHUSETTS 02324
PHONE 508-697-3191 OR 800-548-3385
FAX 508-697-5996
WEBSITE: www.coneco.com

DATE 03/02/2023
DESIGNED: XXX CHECKED: XXX
DRAFTED: XXX IN CHARGE: XXX
SCALE: AS SHOWN
PROJECT NO. 7073
SHEET NO. A3 OF ##

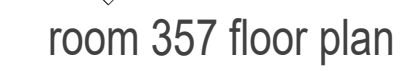
E:\CONECO\DEPT OF MENTAL HEALTH\POCASSET MENTAL HEALTH CENTER\CROWLEY LOGO.JPG


$$3/8" = 1'-0"$$

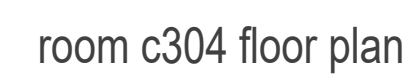
$$3/8'' = 1'-0''$$

- A) DISCONNECT, REMOVE, AND DISPOSE OF EXISTING SHOWER HEAD. CAP PIPING FOR FUTURE RECONNECTION.**
- B) DISCONNECT, REMOVE, AND DISPOSE OF EXISTING FLOOR OR SHOWER DRAIN, P-TRAP, AND TRAP ARM, AND CAP AT CONNECTION TO MAIN.**
- C) EXISTING SHOWER VALVE AND CABINET TO REMAIN.**
- D) DISCONNECT, REMOVE, AND DISPOSE OF EXISTING TUB AND ASSOCIATED PIPING BACK TO WITHIN WALL OR BELOW FLOOR AND CAP FOR FUTURE REUSE.**

- A** FURNISH AND INSTALL A NEW DIVERTER VALVE, SHOWER HEAD, AND HAND HELD SHOWER. EXTEND AND CONNECT TO EXISTING PIPING IN THE AREA. REFER TO ARCHITECTURAL PLANS.
- B** FURNISH AND INSTALL NEW FLOOR DRAIN, P-TRAP, AND TRAP ARM, AND CONNECT TO EXISTING WASTE AND VENT PIPING IN THIS AREA.
- C** FURNISH AND INSTALL NEW LINEAR DRAIN, P-TRAP, AND TRAP ARM, AND CONNECT TO EXISTING WASTE AND VENT PIPING IN THIS AREA.
- D** FURNISH AND INSTALL A NEW SHOWER VALVE AND SHOWER HEAD. EXTEND AND CONNECT TO EXISTING PIPING IN THE AREA. REFER TO ARCHITECTURAL PLANS.
- E** FURNISH AND INSTALL A NEW SHOWER VALVE AND HAND HELD SHOWER. EXTEND AND CONNECT TO EXISTING PIPING IN THE AREA. REFER TO ARCHITECTURAL PLANS.

 $3/8"=1'-0"$  $3/8" = 1'-0"$ * REFER TO ARCHITECTURAL PLANS FOR DRAIN LENGTHS

3'6"=1'-0"

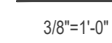
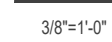
 $3/8" = 1'-0"$ 

3/8"=1'-0"

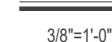
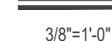
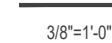


3/8"=1'-0"

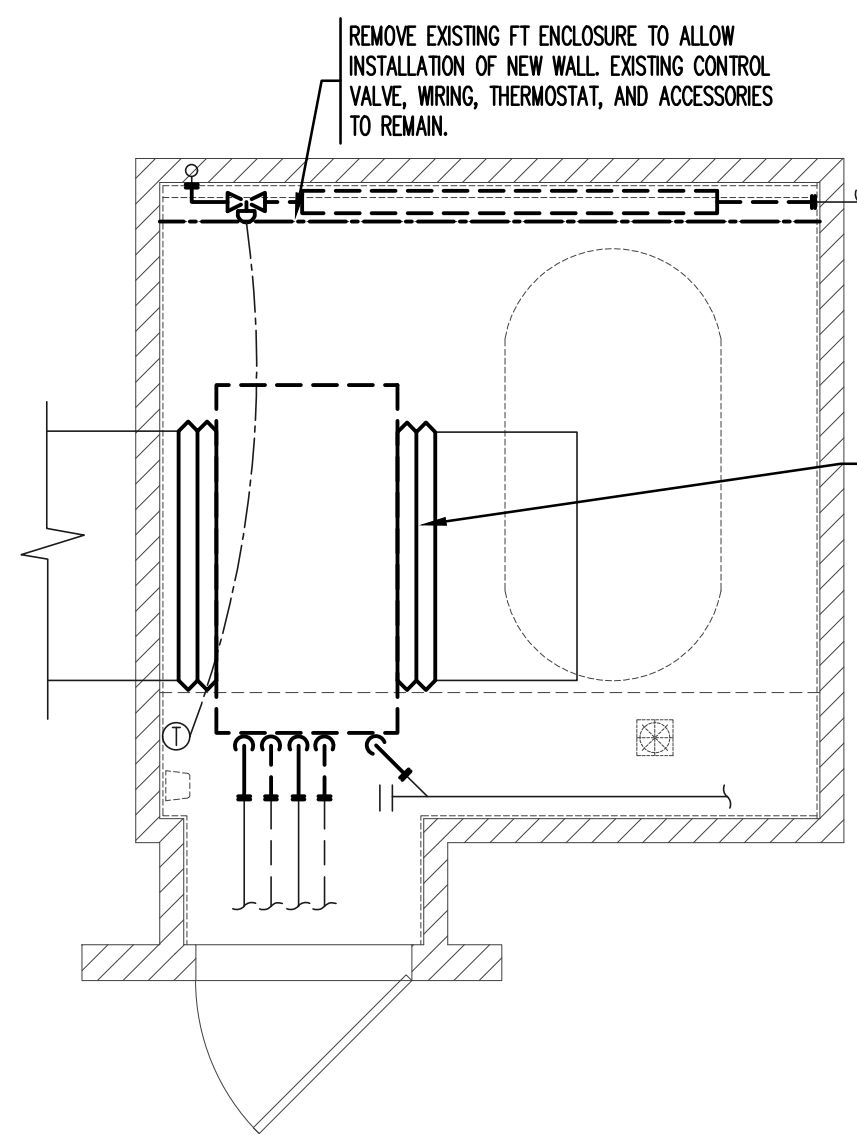
DATE		03/02/2023	
DESIGNED: RLA		CHECKED: RCV	
DRAFTED: RLA		IN CHARGE: RCV	
SCALE:		AS SHOWN	
PROJECT NO.		7050	
SHEET NO.		<div style="font-size: 100px; text-align: center;">P1</div> <div style="text-align: right;">OF ##</div>	



- $318^{\circ}=1^{\circ}0'$

* REFER TO ARCHITECTURAL PLANS FOR DRAIN LENGTHS

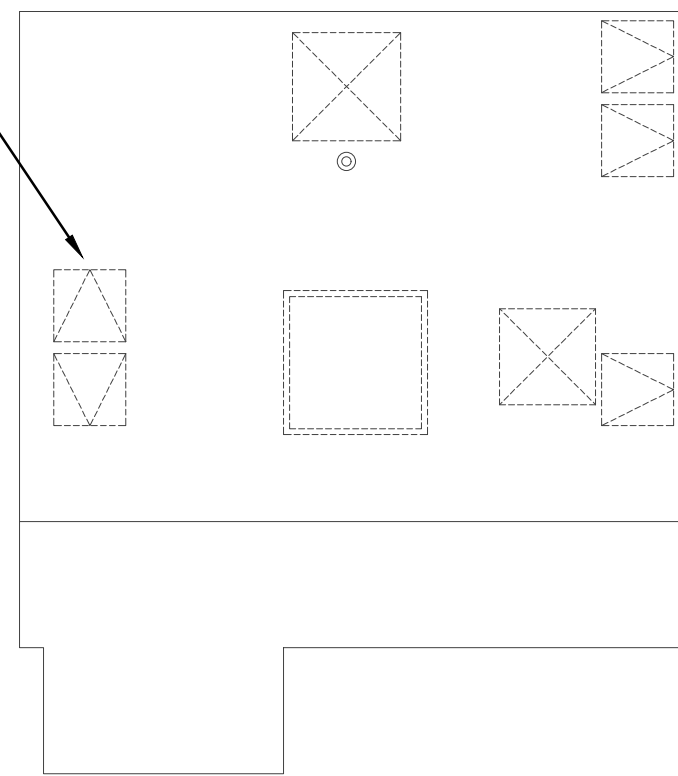
DATE		03/02/2023	
DESIGNED:	RLA	CHECKED:	RCV
DRAFTED:	RLA	IN CHARGE:	RCV
SCALE:		AS SHOWN	
PROJECT NO.		7050	
SHEET NO.		<div style="font-size: 100px; text-align: center;">P2</div> <div style="text-align: right;">OF ##</div>	



room 357 demo plan

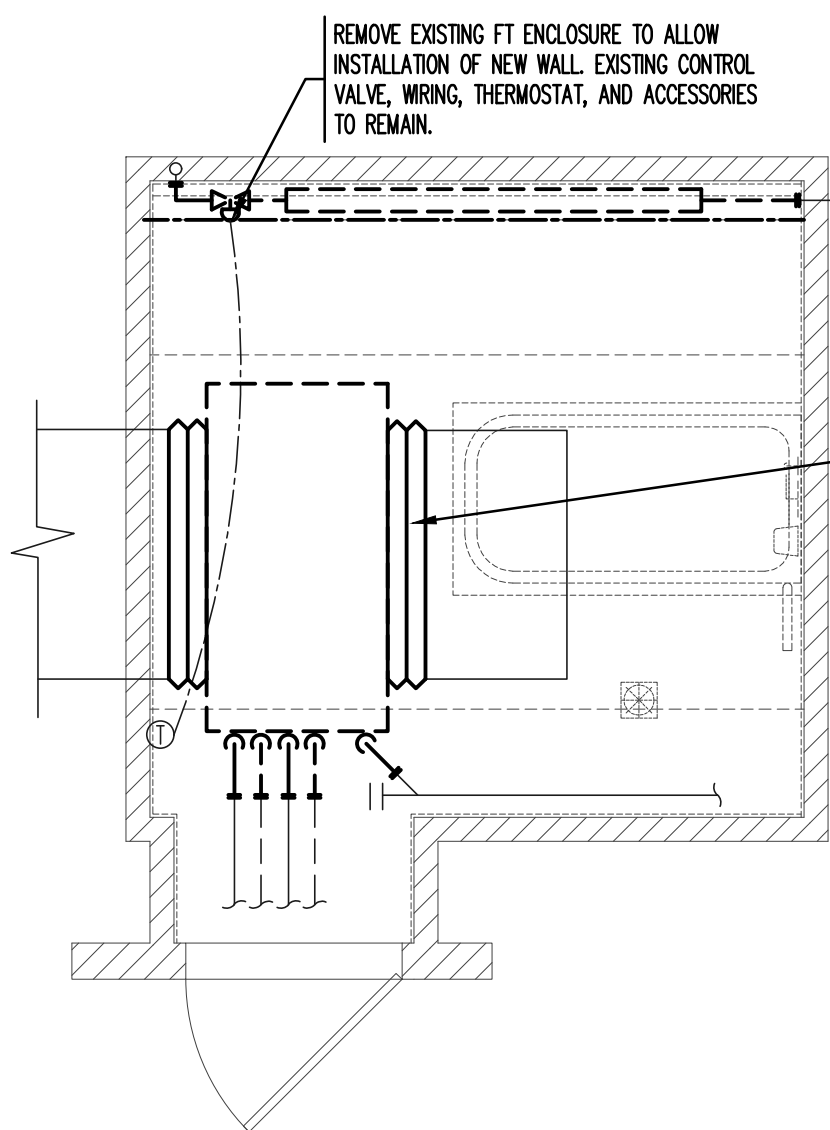
3/8"=1'-0"

EXISTING ACCESS PANELS TO BE REMOVED BY G.C. (TYP.)



room 357 demo rcp

3/8"=1'-0"

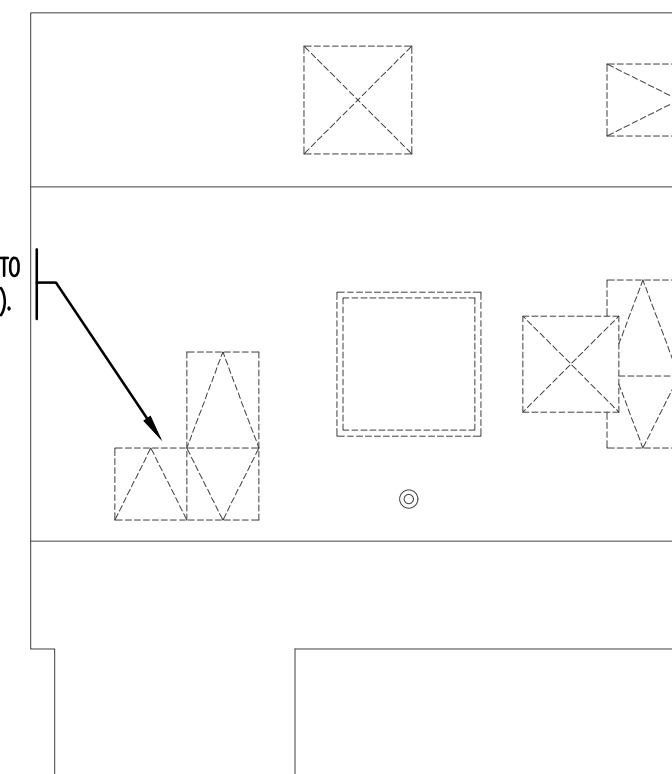


room 457 demo plan

3/8"=1'-0"

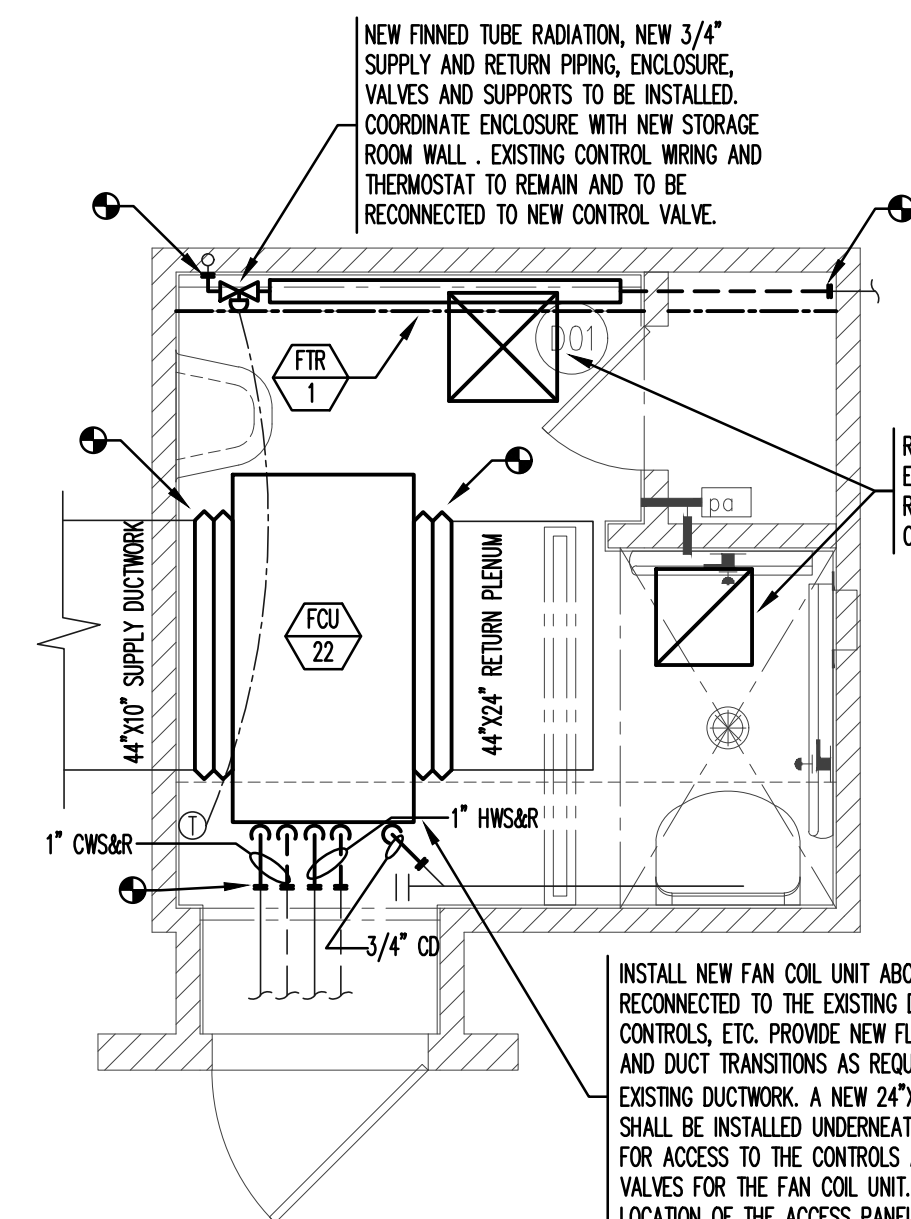
EXISTING FAN COIL UNIT ABOVE CEILING TO BE REMOVED. EXISTING DUCTWORK SHALL REMAIN, REMOVE FLEXIBLE CONNECTIONS. ASSOCIATED PIPING SHALL BE DISCONNECTED AND REMOVED UP TO WHERE SHOWN. EXISTING ISOLATION VALVES SHALL REMAIN. EXISTING CONDENSATE PIPING TO FAN COIL UNIT SHALL BE REMOVED UP TO WHERE SHOWN. EXISTING CONTROL WIRING SHALL BE DISCONNECTED BUT SHALL REMAIN FOR RECONNECTION TO NEW EQUIPMENT. EXISTING CONTROLS SERVING ASSOCIATED FAN COIL UNIT SHALL REMAIN.

EXISTING ACCESS PANELS TO BE REMOVED BY G.C. (TYP.)



room 457 demo rcp

3/8"=1'-0"



room 357 floor plan

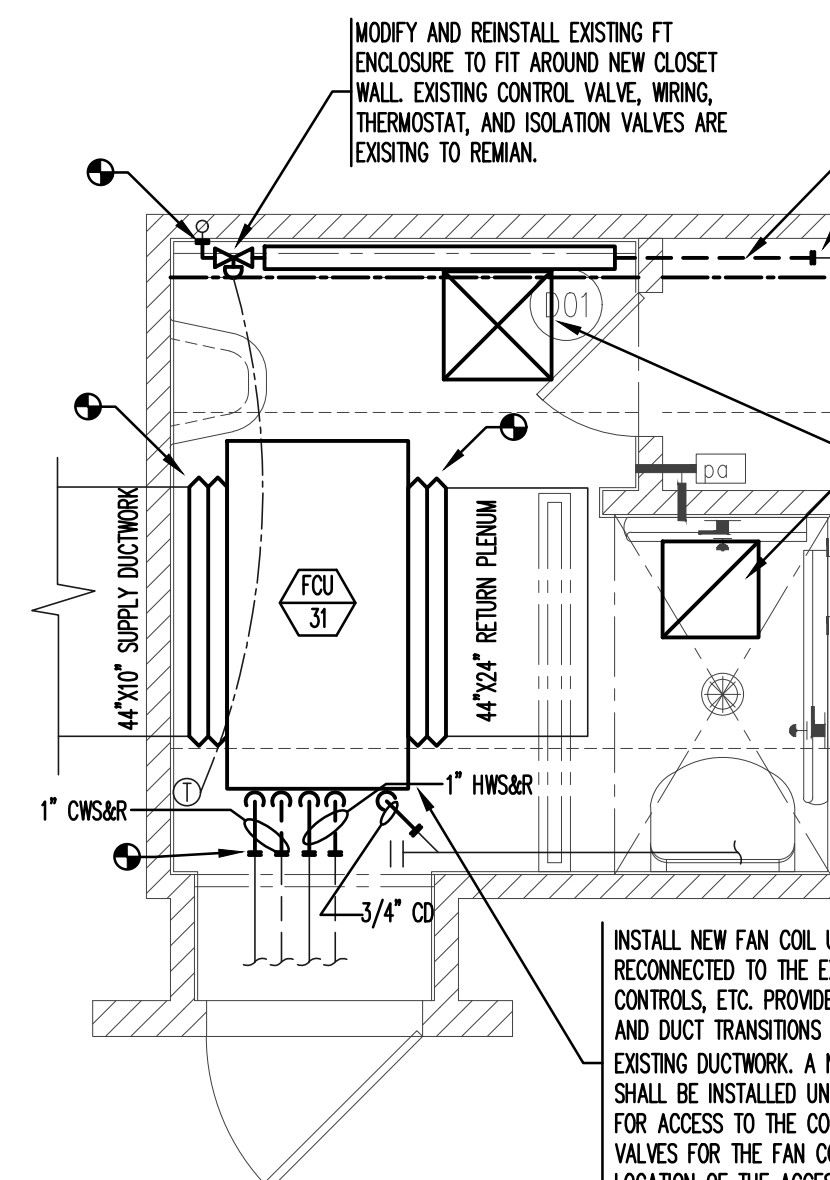
3/8"=1'-0"

REMOVE, CLEAN AND RE-INSTALL EXISTING IGNATURE RESISTANT EXHAUST REGISTER IN THIS GENERAL LOCATION. COORDINATE RE-INSTALLATION WITH GC.

INSTALL NEW FAN COIL UNIT ABOVE CEILING AND RECONNECTED TO THE EXISTING DUCTWORK, PIPING, CONTROLS, ETC. PROVIDE NEW FLEXIBLE CONNECTIONS AND DUCT TRANSITIONS AS REQUIRED TO CONNECT TO EXISTING DUCTWORK. A NEW 24"x24" ACCESS PANEL SHALL BE INSTALLED UNDERNEATH THE FAN COIL UNIT FOR ACCESS TO THE CONTROLS AND PIPING ISOLATION VALVES FOR THE FAN COIL UNIT. COORDINATE EXACT LOCATION OF THE ACCESS PANEL WITH THE GC.

room 357 rcp

3/8"=1'-0"



room 457 floor plan

3/8"=1'-0"

INSTALL NEW FAN COIL UNIT ABOVE CEILING AND RECONNECTED TO THE EXISTING DUCTWORK, PIPING, CONTROLS, ETC. PROVIDE NEW FLEXIBLE CONNECTIONS AND DUCT TRANSITIONS AS REQUIRED TO CONNECT TO EXISTING DUCTWORK. A NEW 24"x24" ACCESS PANEL SHALL BE INSTALLED UNDERNEATH THE FAN COIL UNIT FOR ACCESS TO THE CONTROLS AND PIPING ISOLATION VALVES FOR THE FAN COIL UNIT. COORDINATE EXACT LOCATION OF THE ACCESS PANEL WITH THE GC.

room 457 rcp

3/8"=1'-0"

c.a. crowley.
ENGINEERING, INC.
645 County Street . Suite 6
Taunton, MA 02780
tel . (508) 884.5094 WWW.CROWLEYENG.COM fax . (508) 884.5099

C O N E C O
Engineers, Scientists & Surveyors
4 FIRST STREET, BRIDGEWATER, MASSACHUSETTS 02324
PHONE 508-697-3191 OR 800-548-3355; FAX 508-697-5996
WEBSITE: www.coneco.com

DATE 03/02/2023
DESIGNED: TO CHECKED: MHV
DRAFTED: TO IN CHARGE: MHV
SCALE: AS SHOWN
PROJECT NO. 7050
SHEET NO.

M1
OF ##

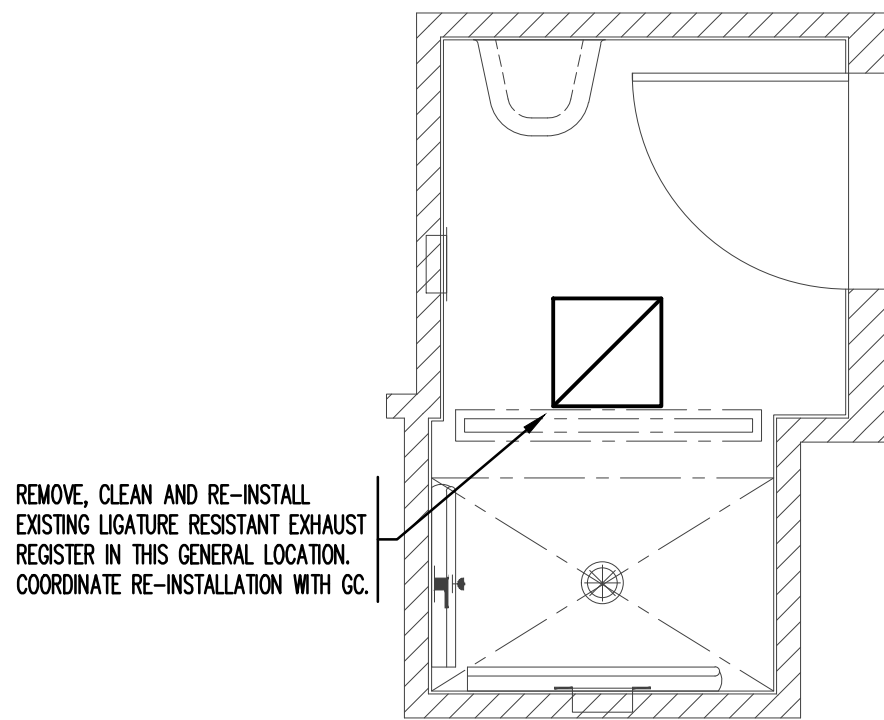
REVISIONS			
NO.	DATE	DESCRIPTION	DR/CK

PREPARED FOR:
DEPARTMENT OF MENTAL HEALTH
167 LYMAN STREET
WESTBOROUGH, MA 01581

PROJECT:
2023-010 GAIN INPATIENT BATHROOM
RENOVATIONS PROJECT

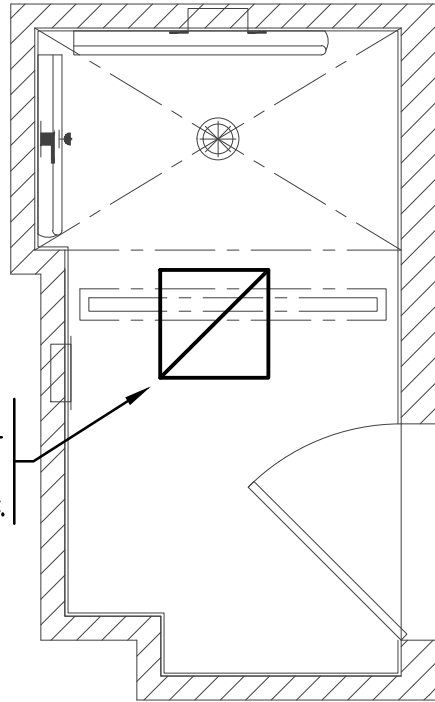
PLAN SET:
INPATIENT SHOWER ROOM
IMPROVEMENTS PROJECT

DRAWING:
HVAC NEW WORK AND
DEMOLITION PART PLANS



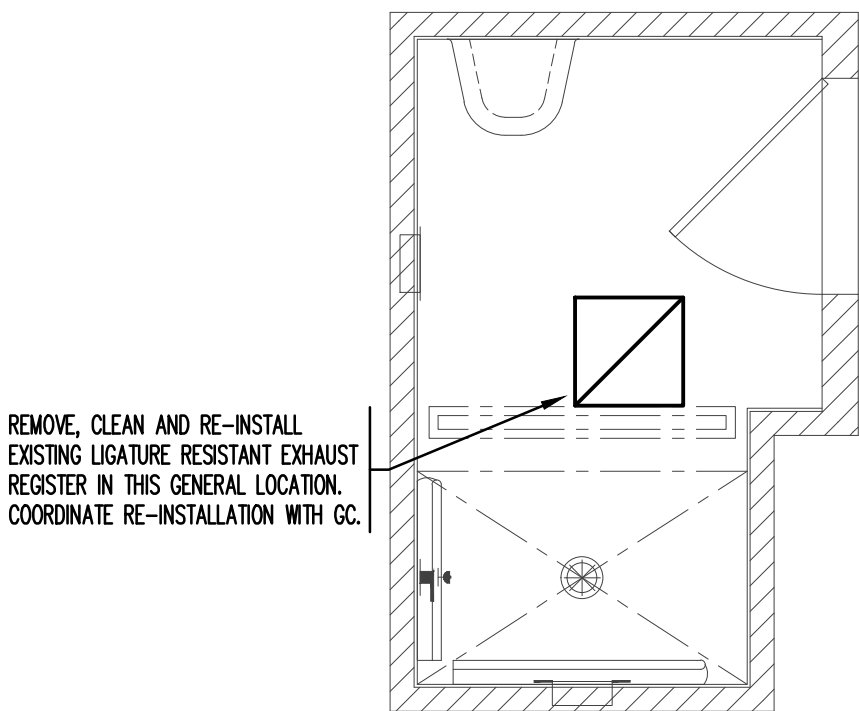
room c302 floor plan

3/8"=1'-0"



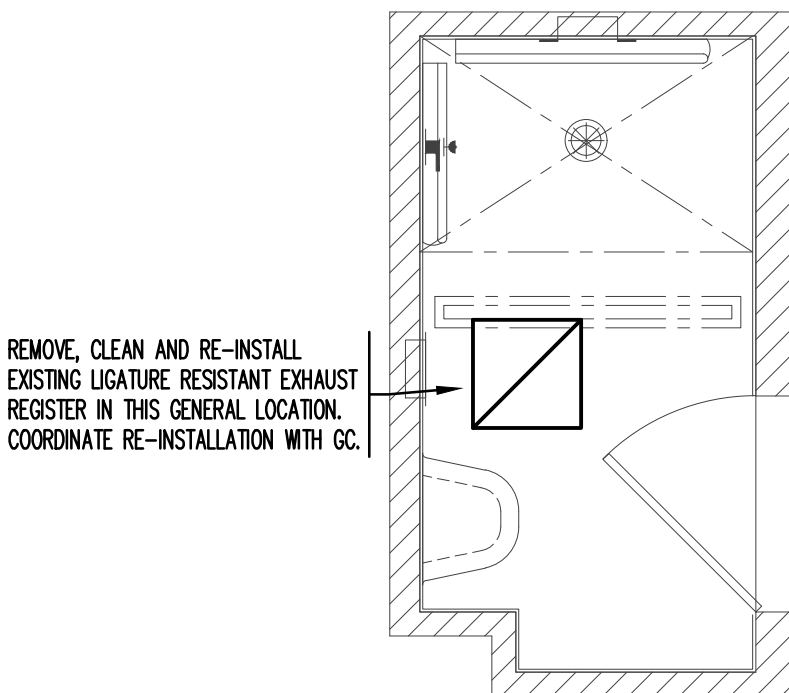
room c304 floor plan

3/8"=1'-0"



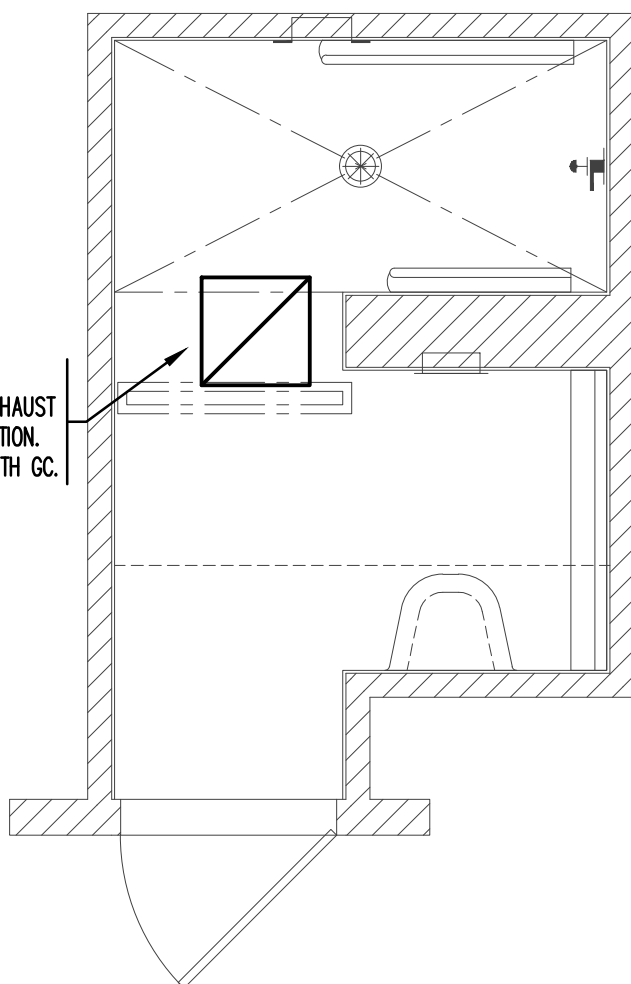
room c402 floor plan

3/8"=1'-0"



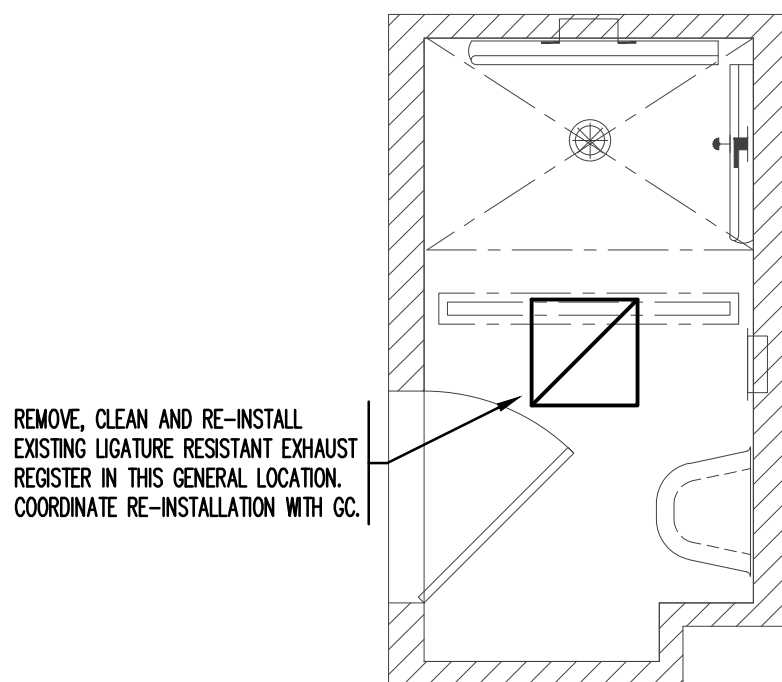
room c404 floor plan

3/8"=1'-0"



room 431 floor plan

3/8"=1'-0"



room c435 floor plan

3/8"=1'-0"

c.a. crowley.
ENGINEERING, INC.

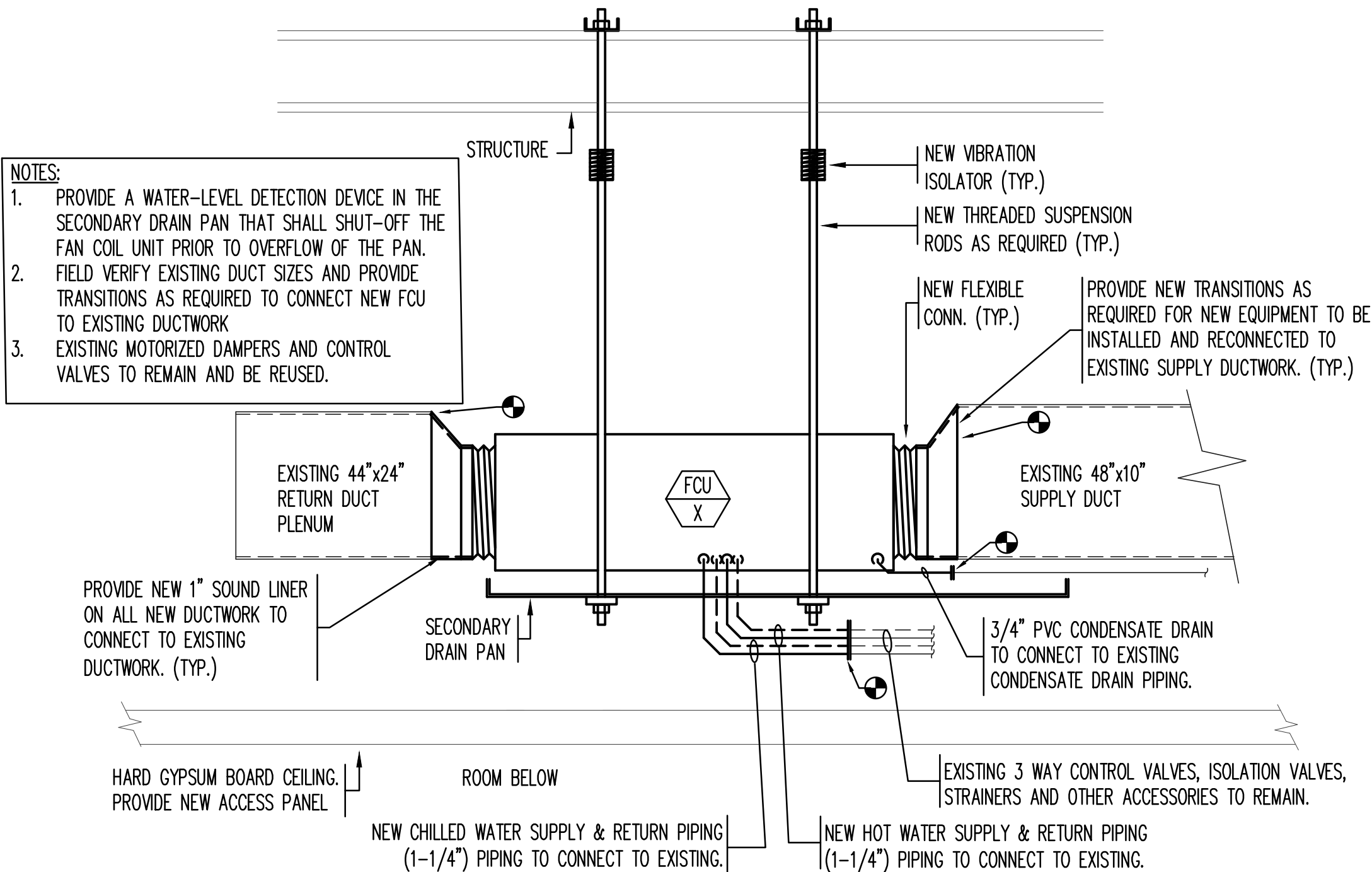
tel. (508) 884.5094 645 County Street . Suite 6 www.crowleyeng.com fax . (508) 884.5099
Taunton, MA 02780

DATE		03/02/2023	
		DESIGNED: TO	CHECKED: MHV
DRAFTED: TO		IN CHARGE: MHV	
SCALE:		AS SHOWN	
PROJECT NO.		7050	
SHEET NO.		M2	
		OF ##	
PROJECT:		2023-010 CAIN INPATIENT BATHROOM RENOVATIONS PROJECT	
		INPATIENT SHOWER ROOM IMPROVEMENTS PROJECT	
PREPARED FOR:		DEPARTMENT OF MENTAL HEALTH 167 LYMAN STREET WESTBOROUGH, MA 01581	
		HVAC NEW WORK PART PLANS	
REVISIONS		NO.	
		DATE	
		DESCRIPTION	
		DR/CK	

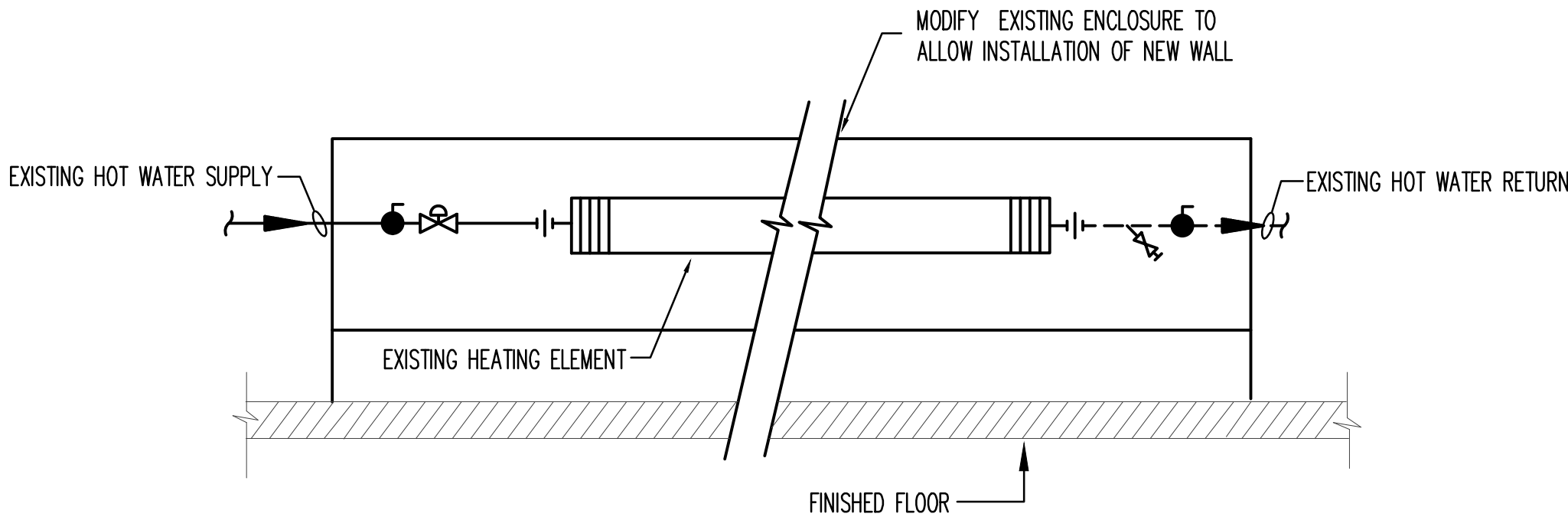
FAN COIL UNIT SCHEDULE																	
ITEM NO.	MODEL	TOTAL CFM	O.A. CFM	COOLING COIL					HEATING COIL				ELECTRICAL				REMARKS
				TOT. MBH	SENS. MBH	EWI	LWT	GPM	MBH	EWI	LWT	GPM	V	PH	HZ	HP	
FCU-22	BCHE054	1850	470	68.46	47.25	44	54	14.30	96.91	200	180	9.33	115	1	60	1.0	①
FCU-31	BCHE054	1850	470	68.46	47.25	44	54	14.30	96.91	200	180	9.33	115	1	60	1.0	①

BASED ON TRANE

- ① PROVIDE NEW THERMOSTAT FOR FAN COIL UNIT. COORDINATE EXACT MAKE AND MODEL WITH THE OWNER. RECONNECT TO EXISTING CONTROL WIRING.



FAN COIL UNIT - DETAIL
NO SCALE



EXISTING FINNED TUBE RADIATION DETAIL
NO SCALE

LEGEND

- SUPPLY AIR DUCT UP
- SUPPLY AIR DUCT DOWN
- RETURN/EXHAUST AIR DUCT UP
- RETURN/EXHAUST AIR DUCT DOWN
- ACOUSTICALLY LINED DUCTWORK (1")
- FLEXIBLE CONNECTION
- THERMOSTAT-ELECTRIC
- FAN COIL UNIT
- HWS HOT WATER SUPPLY
- HWR HOT WATER RETURN
- CHWS CHILLED WATER SUPPLY
- CHWR CHILLED WATER RETURN
- CD CONDENSATE DRAIN
- BALANCING VALVE
- CHECK VALVE
- STRAINER
- CONNECT NEW TO EXISTING
- PC PLUMBING CONTRACTOR
- HVAC HEATING, VENTILATING & AIR CONDITIONING
- EC ELECTRICAL CONTRACTOR
- GC GENERAL CONTRACTOR
- FT FINNED TUBE RADIATION

REVISIONS		DR/CK					
NO.	DESCRIPTION	DATE					

PREPARED FOR:
DEPARTMENT OF MENTAL HEALTH
167 LYMAN STREET
WESTBOROUGH, MA 01581

DRAWING:
HVAC LEGEND, SCHEDULE,
AND DETAILS

PROJECT:
2023-010 CAIN INPATIENT BATHROOM
RENOVATIONS PROJECT

PLAN SET:
INPATIENT SHOWER ROOM
IMPROVEMENTS PROJECT

C O N E C O

Engineers, Scientists & Surveyors

4 FIRST STREET, BRIDGEWATER, MASSACHUSETTS 02324
PHONE 508-697-3191 OR 800-549-5355 FAX 508-697-5996
WEBSITE: WWW.CONECO.COM

DATE	03/02/2023
DESIGNED: TO	CHECKED: MHV
DRAFTED: TO	IN CHARGE: MHV
SCALE:	AS SHOWN
PROJECT NO.	7050
SHEET NO.	M3

