

LOWELL REGIONAL TRANSIT AUTHORITY
GALLAGHER INTERMODAL TRANSPORTATION CENTER
117 THORNDIKE STREET, LOWELL, MA 01852



INVITATION FOR BIDS
for
GALLAGHER TERMINAL &
MAGUIRE TRANSPORTATION CENTER
ROOFING REPLACEMENT PROJECTS

PROJECT MANUAL-BID AND CONTRACT DOCUMENTS

AECOM USA of Massachusetts Inc.
1 Federal Street, 8th Floor
Boston, MA 02210

August 2nd, 2021

CONSTRUCTION SPECIFICATIONS

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Invitation for Bids

GALLAGHER TERMINAL & MAGUIRE TRANSPORTATION CENTER ROOFING REPLACEMENT PROJECTS

The Lowell Regional Transit Authority (LRTA), Lowell, Massachusetts, hereinafter called the LRTA, invites General Bids for the LRTA's **"GALLAGHER TERMINAL & MAGUIRE TRANSPORTATION CENTER ROOFING REPLACEMENT PROJECTS"** project at the Gallagher Intermodal Transportation Center (GITC), 117 Thorndike Street, Lowell, Mass. 01852

GENERAL BIDS are to be sealed in an envelope and marked **"ROOFING REPLACEMENT PROJECTS"** and will be received until 2:00 PM, September 17th, 2021 at the Administration offices of the LRTA, Gallagher Intermodal Transportation Center, 115 Thorndike Street, Level 3B, Lowell, Mass. 01852. All sealed General Bids received by that time and at that place will be publicly opened and read aloud.

Bids received after the respective dates and times specified above for bid opening shall be considered late bids and, therefore, shall not be opened or considered for award pursuant to Massachusetts General Laws, Chapter 149.

Bidders are advised that qualification in accordance with Section 44D of Chapter 149 of the Massachusetts General Laws is a requirement of this Contract. General Bids will only be considered from bidders holding a Certificate of Eligibility from the Division of Capital Asset Management and Maintenance (DCAMM) in the category of Roofing and in a single project amount higher than the amount of the Bid. General Bids must be accompanied by a copy of the Contractor's Certificate of Eligibility, an Update Statement, Non-Collusion Affidavit, Certificate of Authority, Certificate of Good Faith, Certification of Payment of State Taxes, Statement of Tax Compliance, and Certification of Prevailing Wage Rates.

Bidders are advised that the LRTA requires a Project Qualification Statement to be filed with the General Bids as an aid for the LRTA to determine the lowest responsible and eligible Bidder. The form of the Project Qualification Statement is contained in the Bid Documents. Failure by any Bidder to complete and submit the Project Qualification Statement with the General Bid may be grounds for the LRTA to reject that General Bid.

A Pre-Bid Virtual Conference will be held Wednesday, September 1st, 2021 @ 10:00 AM by the LRTA for the purpose of questions and inquiries concerning this Project and the Bid Documents. Key forms and Information will be addressed. Please reach out to the LRTA to receive the electronic meeting link. A Project site visit will also be offered to all interested parties on September 3rd at 9:30 AM.

The Contract Documents, including instructions, bid forms, drawings, specifications and related materials will be available on or after August 25th, 2021 and on file for review at the Administrative Offices of the LRTA at the GITC. The Bid documents and drawings will be mailed by the LRTA upon receipt of payment of \$75.00 by bank, cashier's check, money order or check payable to the Lowell Regional Transit Authority (LRTA). The mailing fee, if requested, is \$40.00 per set in addition to the fee for the Plans and Specifications as noted. The mailing fee is nonrefundable. A refund of \$75.00 will be made upon return of the Project Bid Documents and all Plans and Specifications in good condition within two weeks after the bid opening. The Bid documents may also be reviewed and purchased in person at the LRTA's Administrative Office, GITC, Level 3B, 115 Thorndike Street, Lowell, Mass. 01852.

All Bids shall be accompanied by a bid deposit in form of a certified or cashier's check or a Bid Bond in the amount of five percent (5%) of the Bid Price. A Performance Bond in the full amount of the Contract and a Labor and Materials Payment Bond in the full amount of the Contract will be required of the successful General Bidder. Bids are subject to M.G.L. c.149; and to minimum wage rates as required by M.G.L. c.149; sections 26 to 27H inclusive. The current schedule of labor rates by the Commissioner of Labor and Industries of the Commonwealth of Massachusetts and a schedule of labor rates by the Federal Government are included in the Project Manual. No less than the higher of these rates shall be paid on this Project.

This solicitation, project and contract will be subject to the availability of funding from the Federal Transit Administration (FTA) & the Massachusetts Department of Transportation (MassDOT). The successful bidder will be required to comply with all Equal Opportunity Laws and Regulations. All bidders will be required to certify that they are not on the United States Comptroller General's list of ineligible contractors.

The performance of any contract which may arise from this solicitation is subject to the requirements of Title VI of the Civil Rights Act of 1964 and all applicable equal employment requirements. DBE, MBE, & WBE firms will be afforded full opportunity to submit proposals and will not be subject to discrimination on the basis of race, color, sex or national origin in the LRTA's consideration of any Bid or of an award of contract.

It is the LRTA's policy that DBE/MBE/WBE firms be afforded full opportunity to submit bids and to participate in the performance of LRTA contracts. The LRTA has established a DBE/MBE/WBE participation goal of five and six tenths percent (5.6%) for its eligible procurements and projects. The combined Mass. WBE/MBE goal for this project is Five and Five Tenths Percent (5.5%). These goal must be met, or good faith efforts to meet the goal must be demonstrated, if a bidder is to be considered responsive.

A contract will be awarded, if at all, to the responsive bidder deemed by the LRTA to be the lowest responsible and eligible bidder. The bidder agrees that its bid shall be good and may not be withdrawn for period of THIRTY (30) days, Saturdays, Sundays and legal holidays excluded, after the opening of the bids. The LRTA reserves the right to waive any formalities, to accept or reject, in whole or in part any or all bids., or take whatever other action may be deemed to be in the best interest of the LRTA. The LRTA, when appropriate, reserves the right to conduct a cost and price analysis.

Questions with regard to Bid Procedure and schedule may be directed to Graham Reich, LRTA Procurement Specialist, at the LRTA's Administrative Office. Tel. (978) 459-0164 x210

David Bradley
Administrator
Lowell Regional Transit Authority

INSTRUCTIONS TO BIDDERS

GITC: Roofing Replacement Project
115 Thorndike Street
Lowell, Massachusetts 01852

LOWELL REGIONAL TRANSIT AUTHORITY
Gallagher Intermodal Transportation Center 115 Thorndike Street
Lowell, Massachusetts 01852

Architect/Engineer: AECOM USA of Massachusetts Inc.
1 Federal Street, 8th Floor
Boston, MA 02210

1. **SECURING DOCUMENTS:** Copies of the proposed Contract Documents may be obtained for bidding purposes upon the conditions set forth in these Instructions for Bidders.
2. **BIDDER'S QUALIFICATION:** Qualification of contractors in accordance with Section 44D and other applicable sections of Chapter 149 of the Massachusetts General Laws is a requirement of the Contract Documents. General Bidders shall submit with their bid, among other documents required by the Bid Documents, a certificate of eligibility issued by the Division of Capital Asset Management (DCAM) of the Executive Office for Administration and Finance, Commonwealth of Massachusetts. This certificate of eligibility shall show that the Bidder has been certified in the category of Roofing for projects the size of that advertised herein. General Bidders shall also submit with their bid a DCAM Update Statement summarizing the Bidder's record for the period between the latest DCAM certification and date of this bid. This update statement shall be submitted on DCAM Form CQ3 and signed by the Bidder. It is the Bidder's responsibility to obtain the necessary forms from DCAM and make application to DCAM in sufficient time for DCAM to evaluate the applications and issue a Certificate of Eligibility. The Bidder's Update Statement is not considered a public record as defined in M.G.L. Chapter 4, Section 7, and will not be open to public inspection.
 - 2.1 Project Qualification General Bidders are required to fill out and submit with the bid a General Contractor Qualification Statement, a form of which is contained in the Bid Form packets. The Project Qualification Statement shall be used for the purpose of aiding the Authority in determining the lowest responsible and eligible bidder. Failure of bidders to fill out and submit the Statements with their may be grounds for rejection of the bid or sub-bid.
3. **EXAMINATION OF CONTRACT DOCUMENTS AND SITE OF WORK:** The Bidder is required to examine carefully in detail the character of the soil, the site of the project. The Contract Documents as defined in the GENERAL AND SUPPLEMENTARY CONDITIONS, and all other matters pertinent to the proposed work. It will be assumed that he/she has satisfied himself/herself as to the conditions to be encountered overhead, on the surface and underground; the character, quality and quantities of work to be done and material to be furnished; and the requirements of the Contract and Specifications. No allowance or concession will be made for the lack of such information on the part of the Contractor.

From the Engineer's subsurface investigations and surveys made at the sites, it is assumed that physical conditions, including existing underground and overhead structures locations, are approximately as indicated on the Contract Documents, but such information and the nature of the materials below the surface, the depth to satisfactory foundations or the stability of beds or banks, are not guaranteed or warranted. If the above stated information is used by a Bidder in preparing his/her Bid, he/she assumes all risks resulting from actual conditions differing from the approximations indicated, except as provided by G.L. c. 30, 39N.

Bidders shall ascertain and obtain all governmental and other permits, approvals, consents and requirements with respect to wage scales, trench and structural excavations, tunnel construction, blasting equipment materials, labor, safety and sanitation, and shall base their bid price on full compliance therewith.

3.1 Subsurface Investigations: Bidders are hereby advised that before drilling any holes or excavating any test pits for the purpose of satisfying themselves as to underground conditions, they must secure permission in writing to do such drilling or test pit excavation from authorized officials of the Authority and any governmental bodies and agencies having jurisdiction. It is a requirement of this Contract that DIG SAFE be notified by the bidder at 1 (888) 344-7233 before any excavation is performed.

4. ADDENDA AND INTERPRETATIONS: All questions by prospective bidders as to the interpretation of the Instruction to Bidders, form of contract, plans, specifications, or any other matter pertaining to this solicitation must be submitted in writing to the Authority (referred to herein as LRTA, Owner or Authority) and shall be in its possession not later than 5:00 p.m. on September 6th, 2021. Any interpretation of the Contract Documents will be made only by an addendum issued by the Authority. All addenda will be mailed or delivered by the Authority to all bidders who have taken out plans at the address given by them before the date set for the opening of bids. Oral interpretations given to prospective bidders are not binding.

4.1 Addenda Acknowledgement: Each bidder is required to acknowledge receipt of fill addenda in the spaces provided in the Bid form. It shall be the sole responsibility of bidders to ascertain the existence of any and all addenda issued by the Authority whether or not the addenda are presented or mailed to or received by the bidders. Failure to acknowledge receipt of all addenda may cause the bid to be rejected.

5. SURETY: Should the Surety of any Bond furnished in connection with the Contract Documents become unacceptable or be deemed unsatisfactory to the Authority at any time, the Contractor shall, upon written notice from the Authority, promptly furnish acceptable or substitute Surety as may be required to protect the interests of the Authority or of persons supplying services (including rental of equipment), labor, or materials in the prosecution of the work under the Contract Documents. No further payment shall be deemed due or shall be made under the Contract Documents until the new Surety or Sureties shall qualify and be accepted by the Authority.

5.1 Bid Deposit: Each Bid shall be accompanied by a bid deposit in the form of a bank treasury check, certified check, or bid bond, payable to the Lowell Regional Transit Authority, in the amount of 5 percent of the total bid price (based bid plus any and all alternates). Such bid deposit of the successful bidder shall be used for the payment of liquidated damages to the Authority in the manner described in the form of the "Bid Bond" (as bound herein and part of these Contract Documents) should the successful bidder fail to furnish a signed contract in the form provided in the Bid Documents, the Performance Bond, the Payment Bond, and the insurance certificates and copies of policies as specified in the Contract Documents, within five (5) days (Saturdays, Sundays and legal holidays excluded) after notification by the Authority to furnish such contract, bonds, etc.

Within five (5) days after the formal opening of bids (Saturdays, Sundays, and legal holidays excluded), the bid deposits of the bidders will be returned excepting those bid deposits of the three lowest responsible and eligible general bidders, the bid deposits of the filed sub-bidders identified in the bid form of the lowest responsible and eligible general bidder, and the bid deposits of the three lowest sub-bidders in each sub-trade, all of which the Authority will hold until the award is made and the successful Bidder executes the Contract and provides all bonds and insurance certificates. Upon the execution of a contract and furnishing of bonds and insurance certificates by the lowest responsible and eligible general bidder, all remaining bid deposits will be returned. The security of the successful Bidder will be returned to him when the Contract is executed by both parties hereto and the Contractor has furnished the bonds and insurance certificates as required by the Contract Documents.

5.2 Surety Bonds: Prior to award of Contract, the apparently successful Bidder will be required to furnish within the time specified under these Instructions a "PERFORMANCE Bond" covering faithful and satisfactory performance of the work contracted, in an amount no less than one hundred (100) percent of the Contract amount; and a PAYMENT Bond at an amount not less than one hundred (100) percent of the Contract amount, covering payment in full for all services (including reasonable rentals of equipment for certain periods) rendered, materials furnished, and labor supplied or performed. The same Surety must execute both Bonds. All Bonds shall be issued by companies authorized to transact business in the Commonwealth of Massachusetts and satisfactory to the LRTA. All Bonds shall be in the form included in these Bid Documents, except that the Payment bond shall comply with M.G.L. Chapter 149 Section 29.

6. PREPARATION OF BID: The Contractor shall prepare his Bid by completely filling in the forms contained in the Bid Form packets provided by the Authority. The various forms contained in the Bid Form packets must be properly executed in ink without alterations.

Using the prescribed forms, all bid prices shall be written in ink in the blank spaces provided for each item, and all amount totaled. For unit price items, the "unit price" shall govern in the event of occurrence of a multiplication error in arriving at a total price for the item bid.

The Bidder shall sign his name and give his business address in the space provided therefor. If the Bid is made by a partnership, it shall be signed by a general partner; if made by a corporation, it shall be signed in the name of the corporation by the President or Vice President, or by a duly authorized agent due proof of whose authority shall be attached, and shall have affixed the seal of the corporation attested by the Secretary or Assistant Secretary.

6.1 Approximate Estimate of Quantities if Unit Prices Are Contained on Bid Form: The Bidder's attention is directed to the fact that in contracts based on unit price, the estimated quantities of work to be done and materials to be furnished under these Specifications, as indicated in the Bid form, are approximate and given only for the benefit of the Authority to be used as a basis for comparison of bids. Neither the Authority nor the Engineer warrants or guarantees that the estimated quantities are accurate or will be encountered during the work, nor shall the Contractor make claim or plead misunderstanding or deception because of such estimated quantities, or the character of the work or location, or other conditions pertaining thereto. The Authority reserves the right to increase or diminish any or all of the estimated quantities of work or to omit any of them as it may deem necessary; and any such increase or decrease of the quantities given for any of the items shall not be considered as sufficient ground for granting an increase in the unit price bid, except as expressly set forth in the GENERAL AND SUPPLEMENTARY CONDITIONS.

6.2 Submitting Bid: Bids, accompanied by the Bid deposit, Contractor/Subcontractor Qualification Statement and such other documents as may be required by the Bid Documents, shall be submitted in an opaque envelope, which shall be SEALED and addressed to the Authority. The Bidder's name shall appear in the upper left-hand corner of the envelope; and the descriptive title of the Project and the title and number of the specification section being bid (for filed sub-bid only) shall be entered in the lower left-hand corner of the envelope under the words "Bid Documents".

7. RECEIPT OF BIDS: The place at which Bids must be delivered, the amount of the Bid deposit required, and the date, time, and place of opening of Bids are stated in these Instructions and/or the Invitation to Bid.

8. WITHDRAWAL OF BIDS: All Bidders specifically waive any right to withdraw a Bid after it has been submitted to the Authority, except as provided in the following:

8.1 Prior to Date and Time of Opening Bids: A bidder may withdraw a Bid, prior to the date and time for the opening of Bids, if a written request to withdraw the Proposal is delivered to the Authority by an accredited representative of the Bidder or by U.S. mail, and actually received by the Authority prior to the time set for the opening of Bids.

8.2 On and After Date and Time for Opening Bids: Except as otherwise expressly provided in Chapter 149 of the General Laws, no Bids may be withdrawn at the date and time for the opening of Bids or for a period of thirty (30) calendar days thereafter.

9. **BID REJECTION:** The unqualified right is reserved by the Authority, at its sole option, to waive any informalities, irregularities, defects, errors or omissions in any or all Bids and to reject any or all Bids as may be deemed to be in the best interest of the Authority to the fullest extent allowed by law. Bids which contain omissions, erasures, alterations, additions not called for, conditional bids, or irregularities of any kind, or Bids otherwise regular which are not accompanied by Bid deposit, may be rejected as informal (or shall be rejected if rejection is mandated by law). Bids which fail to comply with any instructions to bidders or which are unbalanced may also be rejected. The Authority reserves the right to reject any sub-bid on any sub-trade to the extent allowed by law, including, but not limited to, if it is determined that the sub-bid does not represent the sub-bid of a person competent to perform the work as specified.

10. **COMMONWEALTH OF MASSACHUSETTS REQUIREMENTS:** Attention is directed to Chapter 149 of the General Laws and Amendments thereto regulating competitive bidding in the award of contracts for public building projects, and the selection of sub-bidders, and applicable sections of which by reference become a part of the information for bidders, and to all other statutory or other pertinent law, applicable thereto.

11. **DISADVANTAGED BUSINESS ENTERPRISE (DBE) PARTICIPATION REQUIREMENTS AND MASSACHUSETTS MBE/WBE GOALS**

11.1 The LRTA has established a Federal DBE/MBE/WBE participation goal of five and six tenths percent (5.6%) for its eligible procurements and projects. The Massachusetts MBE/WBE participation goal is currently at five and five tenths percent (5.5%) combined MBE/WBE participation. These goals must be met, or good faith efforts to meet the goals must be demonstrated, if a bidder is to be considered responsive.

11.2 The Completed Schedule for Participation by DBE/MBE/WBE and the Letter of intent(s) shall be submitted by the apparent low bidder upon notice by the Awarding Authority.

11.3 In addition, the attention of Bidders is directed to the DBE/MBE/WBE requirements and Equal Employment Opportunity requirements included in the Supplementary Conditions.

12. **FILING PROCEDURES**

12.1 Bid documents submitted by all bidders to the Authority shall each be submitted as single originals and enclosed in a single envelope and delivered to the address given in the Invitation to Bid by the time established for the opening of such bids. The envelope containing bid documents shall be sealed and clearly labeled with the words "Bid Documents" for the project name, the title and number of the section of the specifications being bid (for file Sub-Bid only), bidder's name, and bidder's business address.

12.2 If forwarded by mail, the sealed envelope containing the Bid and other required documents and marked as directed above must be enclosed in another envelope addressed in the same manner. The Authority hereby disclaims any responsibility for receipt of mailed bids in time for bid opening. Bidders shall be solely responsible to ensure that its bid is properly sealed, marked, enclosed and delivered.

12.3 Bids received prior to the time established herein for the opening of bids for the general contractor will be securely kept, unopened. The officer whose duty it is to receive and to open all bids will, when the specified time has arrived for the opening of bids, publicly open and read them. No responsibility will be attached to an officer for premature opening of a bid not properly addressed or identified.

13. FOREIGN CORPORATIONS: The Authority shall not enter into a contract with a general bidder which is a foreign corporation until such foreign corporation has filed with the Authority a certificate of the State Secretary for the Commonwealth, stating that such corporation has complied with G.L. c. 156D, s. 15.03 and s.5 and the date of such compliance, and has not filed all annual reports required by G.L. c. 156D, s. 16.22. See also G.L. c. 30, s. 39L.

14. POWER OF ATTORNEY: Attorneys-in-fact who sign contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

15. AWARD OF CONTRACT:

15.1 The award of a general contract, if any, shall be made to the lowest responsible and eligible bidder possessing the skill, ability, and integrity necessary for the faithful performance of the work, who shall certify that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work, which certification is contained on the general bid form, and meets all other qualification of the Contract Documents. Essential information for the determination of such responsibility and eligibility shall be submitted in such form as the Authority may require, and shall include as a minimum those documents required by Article 2 of these Instruction to Bidders.

15.2 The Owner shall have the right to determine the low bidder on the basis of the sum of the base bid accepted by the Owner.

16. EXECUTION OF CONTRACT: The Bidder to whom an award, if any, is made shall execute the Contract Agreement and furnish the required performance and payment bonds within five (5) days after being given notice of the award (Saturdays, Sundays and legal holidays excluded). The Authority may require appropriate evidence that the persons executing the Contract Agreement and the bonds for both the Bidder and his surety or sureties are duly empowered to do so. Separate performance and payment bonds are required, each in an amount at least equal to the Total Bid Price. The surety or sureties shall be a corporation or corporations acceptable to the Authority. Alterations, extensions of time for performance, extra and additional work and other changes authorized under the Contract Documents may be made without notice or consent of the surety and sureties.

17. PREVAILING WAGES/DAVIS-BACON/MASSACHUSETTS PREVAILING WAGE LAW:

Per Article 17 of the Supplementary Conditions, all bids shall be based on payment of the minimum wages required by the Davis-Bacon Act (40 USC§276a -276a-5 (1995) 29 CFR§ 5 (1995)), as amended, and the Massachusetts Prevailing Wage Law (G.L. c. 149, §§ 26-27 et seq.), as amended. Wage-rate schedules are included in these Bid Documents.

LOWELL REGIONAL TRANSIT AUTHORITY



GENERAL CONTRACTOR- BID FORMS

GALLAGHER TERMINAL & MAGUIRE TRANSPORTATION CENTER ROOFING REPLACEMENT PROJECTS

GALLAGHER INTERMODAL TRANSPORTATION CENTER 117 THORNDIKE STREET
LOWELL, MASSACHUSETTS

AUGUST 2021

SCHEDULE

Time Table:

August 25th: Bid Documents Advertised in Boston Globe, Central Register, and COMMBUYS

August 25th: Bid Documents available at LRTA for pickup.

September 1st: Pre Bid Conference 10 AM @ LRTA.

September 6th: 2pm deadline for submission of clarifications/inquiries.

September 10th: Responses regarding clarifications/inquiries.

September 17th: Bids Due at 2pm.

Invitation for Bids

GALLAGHER TERMINAL & MAGUIRE TRANSPORTATION CENTER ROOFING REPLACEMENT PROJECTS

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This solicitation, project and contract will be subject to the availability of funding from the Federal Transit Administration (FTA) & the Massachusetts Department of Transportation (MassDOT). The successful bidder will be required to comply with all Equal Opportunity Laws and Regulations. All bidders will be required to certify that they are not on the United States Comptroller General's list of ineligible contractors.

The performance of any contract which may arise from this solicitation is subject to the requirements of Title VI of the Civil Rights Act of 1964 and all applicable equal employment requirements. DBE, MBE, & WBE firms will be afforded full opportunity to submit proposals and will not be subject to discrimination on the basis of race, color, sex or national origin in the LRTA's consideration of any Bid or of an award of contract.

It is the LRTA's policy that DBE/MBE/WBE firms be afforded full opportunity to submit bids and to participate in the performance of LRTA contracts. The LRTA has established a DBE/MBE/WBE participation goal of five and six tenths percent (5.6%) for its eligible procurements and projects. The combined Mass. WBE/MBE goal for this project is Five and Five Tenths Percent (5.5%). These goal must be met, or good faith efforts to meet the goal must be demonstrated, if a bidder is to be considered responsive.

A contract will be awarded, if at all, to the responsive bidder deemed by the LRTA to be the lowest responsible and eligible bidder. The bidder agrees that its bid shall be good and may not be withdrawn for period of THIRTY (30) days, Saturdays, Sundays and legal holidays excluded, after the opening of the bids. The LRTA reserves the right to waive any formalities, to accept or reject, in whole or in part any or all bids., or take whatever other action may be deemed to be in the best interest of the LRTA. The LRTA, when appropriate, reserves the right to conduct a cost and price analysis.

Questions with regard to Bid Procedure and schedule may be directed to Graham Reich, LRTA Procurement Specialist, at the LRTA's Administrative Office. Tel. (978) 459-0164 x210

David Bradley
Administrator
Lowell Regional Transit Authority

LOWELL REGIONAL TRANSIT AUTHORITY
ADDENDUM PAGE

The undersigned acknowledges receipt of the following addenda to the Proposal/Bid documents (give number and date of each):

Addendum No.	Dated
Addendum No.	Dated
Addendum No.	Dated
Addendum No.	Dated
Addendum No.	Dated
Addendum No.	Dated

Failure to acknowledge receipt of all addenda may cause the Bid to be considered not responsive to the invitation, which would require rejection of the Bid.

Signature

Title

Date

**LOWELL REGIONAL TRANSIT AUTHORITY
115 THORNDIKE STREET
LOWELL, MASSACHUSETTS 01852
FORM OF BID / BID DEPOSIT**

TO THE LOWELL REGIONAL TRANSIT AUTHORITY

The undersigned hereby declares to have carefully examined the annexed form of Contract, Specifications and Plans therein referred to and the site where the Project Work is to be performed.

The undersigned proposes to furnish all labor, materials, and equipment required for the **GALLAGHER TERMINAL & MAGUIRE TRANSPORTATION CENTER ROOFING REPLACEMENT PROJECTS** at the LRTA's Gallagher Intermodal Transportation Center, Lowell, Mass. for the Lowell Regional Transit Authority in accordance with the Plans and Specifications prepared by AECOM USA of Massachusetts Inc. 1 Federal Street, 8th Floor Boston, MA 02210, for the unit price, lump sum and allowance prices specified in the Schedule of Bid Prices, subject to additions and deductions according to the terms of the Specifications.

Accompanying this Bid Form is a bid deposit in the amount of five (5) percent of the value of the bid which shall become the property of Lowell Regional Transit Authority if, in case this Bid shall be accepted by said Authority, the undersigned shall fail to comply with the applicable statutes or fail as required hereby to execute the Contract with, and furnish bonds and certificates to said Authority, within the time provided.

The undersigned proposes and agrees that, if within thirty (30) calendar days after the opening of bids, notice that the General Bid has been accepted by the Authority shall be mailed to him at the business address given below, he shall execute the Contract, and furnish a Performance Bond and also a Labor and Materials Payment Bond for the full amount of the Contract price, within ten (10) calendar days after the date of the Notice of Award. Each bond shall be of a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and satisfactory to the awarding authority, the premiums for which are to be paid by the general contractor and are included in the Contract Sum. 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. The undersigned agrees that he will comply with the minority manpower ratio and specific action steps prescribed in these specifications.

Date: _____

(Name of General Bidder)

By: _____

(Business Address)

NOTE: If the Bidder is a corporation, indicate state of incorporation under signature and affix corporate seal; if a partnership, given full names and residential address of all partners; and if an individual, give residential address if different from business address.

TO: Lowell Regional Transit Authority
Gallagher intermodal Transportation Center 115 Thorndike Street
Lowell, Massachusetts 01852

FROM _____
(Name of Bidder)

(Address)

A. The undersigned proposes to provide all services and equipment required for the GALLAGHER TERMINAL & MAGUIRE TRANSPORTATION CENTER ROOFING REPLACEMENT PROJECTS, 115 and 117 Thorndike Street, Lowell, Massachusetts in accordance with the accompanying plans and specifications prepared by AECOM, for the Contract Price specified below, subject to additions and deductions according to the terms of the specifications.

B. The bid includes addenda numbered:

Addendum No.	Date_____	Addendum No.	Date_____
Addendum No.	Date_____	Addendum No.	Date_____
Addendum No.	Date_____	Addendum No.	Date_____
Addendum No.	Date_____	Addendum No.	Date_____

C. The Proposed Total Contract Price in words and figures is:

_____ Dollars (\$_____)

In the event of a conflict between the price written in words and the price written in figures, the lowest price shall control.

- D. The undersigned agrees that, if he/she is selected as general contractor, he/she will within five (5) days, Saturdays, Sundays, and legal holidays excluded, after presentation thereof by the Authority, execute a contract in accordance with the terms of this bid and furnish a performance bond and also a labor and materials or payment bond each of a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and satisfactory for the Awarding Authority and each in the sum of the contract price, the premiums for which are to be paid by the General Contractor and are included in the contract price; provided, however, that if there is more than one surety company, the surety companies shall be jointly and severally liable.

The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that he will comply fully with all laws and regulations applicable to awards made subject to Sections 44A- 440 of Chapter 149 of the Massachusetts General Laws.

The undersigned 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 paragraph the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

The undersigned further certifies under the penalties of perjury that he/she said undersigned is not presently debarred from doing public construction work in the Commonwealth of Massachusetts 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 the penalties of perjury, per Section 49A of Chapter 62C of the Massachusetts General Laws that has complied with all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors, and withholding and remitting of child support.

- E. The undersigned hereby agrees to complete the project within four hundred and fifty days from Award of Contract and Notice to Proceed.
- F. Bidder

The names and address of all persons interested in the Bid, as principals other than the below signed bidder, are as follows:

a. The bidder is a (an), _____
(Individual/Partnership/Corporation)

b. If the Bidder is a Partnership, name and residential address of all partners:

c. If Bidder is a Corporation, state the following:

President is _____

Treasurer is _____

Corporation is incorporated in the State of _____

Place of Business is _____

i. The Certificate required by General Laws c. 156D s. 1.20 was filed on:

ii Its registered agent under G.L. c. 156D, s. 5.01 is:

d. If the business is conducted under any title other than the real name of the Bidder as stated herein, state the time when, and all the places where, the Certificate required by General Laws c. 110, s.5 was filed:

e. The Federal Social Security Identification Number of the Bidder (the number used on Employer's Quarterly Federal Tax Return, U.S. Treasury Department, for 941) is:

f. Date: _____

Bidder: _____

By: (Title) _____ (Name) _____

Corporate Seal:

GENERAL CONTRACTOR QUALIFICATION STATEMENT
THIS FORM MUST BE SUBMITTED WITH THE BID

1. Number of years in business: _____
2. Changes in name or business form, dates of change, and reason(s) for change:
 - a. _____
 - b. _____
 - c. _____
 - d. _____

3. Names of projects as a general contractor with contracts having dollar value in amount of such contractor's total bid price or greater in last 5 years, names of Design and Owner:

PROJECT NAME	DOLLAR VALUE	DESIGNER	OWNER
a.			
b.			
c.			
d.			
e.			

4. List of all construction projects your firm has in process as a general contractor on this date, regardless of when work commenced.

[illegible]

5. Provide the following information concerning each project listed in Item 4 above.

PROJECT TITLE	COMPANY TITLE	CONTACT PERSON	CONTACT TELEPHONE
---------------	---------------	----------------	-------------------

OWNER
DESIGNER

OWNER
DESIGNER

OWNER
DESIGNER

OWNER
DESIGNER

6. State the total contract amount left to complete all contracts current in progress:

\$. _____

7. List each project which your firm has failed to complete in the last five years and describe the circumstances leading to the project failure.

PROJECT TITLE	CONTRACT AMOUNT	CIRCUMSTANCES
---------------	-----------------	---------------

8. List all names of all supervisory personnel including project managers and superintendents, who will be assigned to the project if your organization is selected to perform the work. Attached resumes of these personnel.

9. Describe in detail any significant changes to your firm's business organization, financial condition or bonding references that have taken place in the last five years.

10. On the table below:

- a. List each judicial or administrative proceeding relating to the procurement of performance of any public or private construction contract instituted or concluded adversely against your firm or a principal of your firm in the last three years.
- b. List each criminal law proceeding relating theft, embezzlement, forgery, bribery, falsification or destruction of records, receipt of stolen property, or environmental offenses brought against or concluded adversely against your firm or a principal of your firm in the last three years
- c. List any bankruptcy of an organization where a principal of your firm served as a principal.
- d. Judicial or administrative, criminal law and disbarment proceedings.

11. Single Project Bond Capacity: _____
12. Total Bonding Capacity: _____
13. Identify any current pre-qualification determinations by public agencies. Attach copy of pre-qualification certificate(s).

CONTRACTOR'S AFFIDAVIT:

I swear under the pains and penalties of perjury that the information provided in the Contractor's Qualification Statement is true, accurate, and complete, and that the accompanying bid is in all respects bond fide, fair and made without collusion or fraud with any other person.

_____	_____
Bid Date	Print Name of Bidder

_____	_____
Project Number	Business Address

_____	_____
Awarding Authority	Signature of Bidder

LOWELL REGIONAL TRANSIT AUTHORITY

STATEMENT OF BIDDER'S/PROPOSER'S QUALIFICATIONS

1. Name of Bidder/Proposer: _____
2. Business Address: _____
3. When Organized: _____
4. Where Incorporated: _____
5. How many years has your firm been engaged in this business under its present name?
6. Have you ever refused to sign a contract at your original bid or proposed price? _
7. Have you ever defaulted on a contract?_____Are you party to any current litigation? _____
8. Will you, upon request furnish any other information (appropriate to this solicitation) that the Authority may require? _____
9. The undersigned hereby authorizes requests of any appropriate person to furnish any information requested by the LRTA in verification of the recitals comprising this Statement of Bidder's/Proposer's Qualifications.

Firm/Proposer/Bidder Name

Signed by: Name & Title

Date

LOWELL REGIONAL TRANSIT AUTHORITY

PRESENTATION OF REFERENCES

I herein certify that the information following showing Authority/Company/Municipality name, address, telephone number and contact person is a representative list of Authorities/Companies/Municipalities which have contracted with this firm. This list is presented in compliance with the RFP/IFB instructions and requirements

References (attach list if needed):

Name _____ Name _____

Address _____ Address _____

Telephone No. _____ Telephone No. _____

Contact Person _____ Contact Person _____

Name _____ Name _____

Address _____ Address _____

Telephone No. _____ Telephone No. _____

Contact Person _____ Contact Person _____

Certified to by: _____

(Signature and Title)

LOWELL REGIONAL TRANSIT AUTHORITY
COMPLETENESS OF PROPOSAL/BID

I herein certify that I have read and understand all BIDDING/PROPOSAL documents and any amendments, changes and Addenda submitted by the Lowell Regional Transit Authority and that I have fully complied with all provisions of same.

I further certify and represent that any omission or deviation from these documents may or will, at the sole discretion of the LRTA, render this bid unresponsive and ineligible for further consideration in this bidding process.

Firm

Name

Title

Telephone No.

Date

FAX No.

Email

CERTIFICATE OF CORPORATE AUTHORITY

At a duly authorized meeting of the Board of Directors of

(Name of Corporation)

held on _____ it was VOTED that:
(Date)

(Name) (Officer)

of this corporation, be and he/she hereby is authorized to execute contracts, deeds and bonds in the name and on behalf of said corporation, and affix its corporate seal hereto; and such execution of any contract, deed or obligation in this corporation's name on its behalf by such

(Officer)
under seal of the company, shall be valid and binding upon this corporation.

A True Copy,

ATTEST:

TITLE:

PLACE OF BUSINESS:

DATE OF THIS CERTIFICATE: _____

I hereby certify that I am the clerk of the _____ that _____
is duly elected _____ of said corporation, and that the above vote has not been
amended or rescinded and remains in full force and effect as of the date of this contract.

CORPORATE SEAL:

(Clerk)

LOWELL REGIONAL TRANSIT AUTHORITY
CERTIFICATE
BUY AMERICA PROVISIONS

This procurement is subject to the FEDERAL TRANSIT ADMINISTRATION'S Buy America Requirements in 49 CFR 661.13.

A Buy America Certificate, as per attached form, must be completed and submitted with the bid. A bid which does not include the certificate will be considered non-responsive.

A waiver from the Buy America Provision may be sought by (Recipient) if grounds for the waiver exist.

In order to qualify as a domestic end-product, the cost of components produced in the United States must exceed 70 percent (70%) to the cost of all components, and final assembly must take place in the United States. Additionally, any manufactured good must be 100 percent (100%) produced in the United States to qualify. This includes both components, and assembly.

BUY AMERICA CERTIFICATE

The proposer/bidder/contractor hereby certifies that it **will comply** with the requirements of 49 U.S.C. 5323(j)(1) and the applicable regulations in 49 CFR 661.

Date: _____ Company: _____

Signature: _____ Title: _____

CERTIFICATE OF NON-COMPLIANCE

The proposer/bidder/contractor hereby certifies that it **cannot comply** with the requirements of 49 U.S.C. 5323 (J)(1), but it may qualify for an exception pursuant to 49 U.S.C. 5323(j)(2)(B) or (j)(2)(D) and the regulations in 49 CFR 661.7.

Date: _____

Signature: _____ Title: _____

AFFIDAVIT

State of (_____)

County of _____ Date: _____ 20 () _____

The undersigned being duly sworn, deposes and says that he/she is the sole owner; partner; president, treasurer, or other duly authorized official of corporation

of (_____), for
name of bidder as appearing in submitted bid

work in (_____) on (____);
City/Town/State opening date of bid

and certifies under 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 paragraph the word “person” shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

Signature & title of person making Affidavit

Sworn to before this (_____) day of _____ 20 (_____) .

Notary Public

My commission expires:

LOWELL REGIONAL TRANSIT AUTHORITY

NON-COLLUSION BIDDING CERTIFICATION

By submission of this Bid/Proposal, each Bidder and each person signing on behalf of any Bidder certifies under penalty of perjury, that to be the best of their knowledge and belief:

1. The prices in this Bid/Proposal have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition as to any other matter relating to such prices with any other Bidder or with any other competitor.
2. Unless otherwise required by law, the prices which have been quoted in this Bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to opening, directly or indirectly, to any other Bidder or to any competitor; and,
3. No attempt has been made or will be made by the Bidder to induce any other person, partnership or corporation to submit or not to submit a Bid for the purpose of restricting competition.

Signature: _____ Title: _____

Organization/Company: _____ Date: _____

NOTE: Where the words Bid or Bidder appear alone, include Proposal or Proposer as may be Applicable.

LOWELL REGIONAL TRANSIT AUTHORITY

CERTIFICATE EQUAL EMPLOYMENT OPPORTUNITY

The _____ certifies that it is in
(Name: Company, Partnership, or Individual)

conformance with all applicable federal and state equal employment opportunity laws and regulations and that it does not discriminate in any of its employment practices on the basis of race, color, religion, national origin, age, sex or marital status.

Date: _____ By: _____

Title: _____

RIGHT-TO-KNOW LAW
CERTIFICATION

The Bidder hereby certifies that, if awarded this Contract, he/she will fully comply with the Massachusetts Right-to-Know Law, c. 470 of the Acts of 1983, (the Act.). In addition, he shall:

1. Obtain a Material Safety Data Sheet, (MSDS), for all substances or mixtures of substances which appear on the Massachusetts Substance List that he or any of his subcontractors brings to or uses on the worksite and will keep a copy of that MSDS on the worksite of this Contract.
2. Label each container of a substance or mixture of substances on the Massachusetts Substance List as required in §7 of the Act.
3. Provide the same training and non-technical instruction that he is required to provide under §15 of the Act to all Authority employees who are exposed to the substance or to the mixture of substances. Training shall include instruction on the nature and effects of any substance or mixture of substances listed on the Massachusetts Substance List which the Bidder or any of his subcontractors brings to or uses on the worksite.
4. Provide to Authority employees on the worksite the same protective equipment that the Bidder or any of his subcontractors provides to his employees.

Signature of Authorized Representative of Bidder

Name and Address of Bidder

CERTIFICATION OF DUMPING FACILITIES

I, _____
certify that I have adequate dumping facilities available at;

and that these facilities will be used in connection with work undertaken on this Contract and
that such use will be in a manner compliant with State and Local requirements.

Signature of Authorized Representative Bidder

Name and Address of Bidder:

Date

Form A

**SCHEDULE OF PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISE
(TO BE ATTACHED TO THE BID FORM)**

PROJECT: Gallagher Terminal & Maguire Transportation Center Roofing Replacement Projects

(NAME OF PRIME BIDDER)

[illegible]

**A COPY OF THE DBE'S MOST RECENT CERTIFICATION AND AN ORIGINAL AFFIDAVIT MUST BE ATTACHED
TO THIS SCHEDULE**

Form B

**DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
LETTER OF INTENT**

To: _____
(Name of Prime Bidder)

The undersigned intends to perform work in connection with the above project as (check one):

_____ an individual _____ DBE
_____ a partnership _____ a joint venture
_____ a corporation

The Disadvantaged Business status of the undersigned is confirmed:

- (a) on the reference list of Disadvantaged Business Enterprises dated _____, or
(b) on the attached Disadvantaged Business Enterprise Identification Statement.

The undersigned is prepared to perform the following work in connection with the above project,

(Specify in detail particular work items or parts thereof to be performed):

_____ at the following price: _____

You have projected the following commencement date for such work, and the undersigned is projecting completion of such work as follows:

Items	Projected Commencement Date	Projected Completion Date
_____	_____	_____
_____	_____	_____

The above work will not be sublet to a non-Disadvantaged Business Enterprise at any tier. The undersigned will enter into a formal agreement for the above work with you, conditioned upon your execution of a contract with the Authority.

Date _____

Name of Disadvantaged Business Enterprise

By _____

Form C

DBE AFFIDAVIT

STATE OF _____ (Date _____)

COUNTY OF _____ S.S.

The undersigned being duly sworn, deposes and says that he/she is the

(sole owner; partner; president; treasurer; or other duly authorized official of a corporation)

of _____
(Name of DBE)

and certifies that since the date of its certification by

(SOMWBA or out-of-state certification agency)

the certification has not been revoked nor has it expired nor has there been any change in the minority

status of _____
(Name of DBE)

(Signature and Title of Person Making Affidavit)

Sworn to before me this _____ day of _____ 20____

(Notary Public)

NOTE: The Bidder must attach the DBEs most recent certification letter or document to this affidavit.

Form D

DISADVANTAGED BUSINESS ENTERPRISE UNAVAILABLE CERTIFICATION

I _____, _____ (Name) _____ (Title)
of _____ certify that on _____
(Prime Bidder) (Date)

I contacted the following Disadvantaged Business Enterprise to obtain a bid for work items to be performed on Contract No. _____

<u>Disadvantaged Contractor</u>	<u>Work Items Sought</u>	<u>Form of Bid Sought</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

To the best of my knowledge and belief, said Disadvantaged Business Enterprise was unavailable for work on this project, or unable to prepare a bid for the following reason(s):

Signature: _____

Date: _____

_____, was offered an opportunity to
(Name of Business Enterprise)

bid on the above-identified work on _____ by _____
(Date) (Source)

The above statement is a true and accurate account of why I did not submit a bid on this project.

(Signature of Disadvantaged Business Enterprise)

(Title)

Date: _____

LOWELL REGIONAL TRANSIT AUTHORITY
CERTIFICATE
REQUIREMENT OF REVENUE ENFORCEMENT AND PROTECTION
PROGRAM

In accordance with the provisions of the Revenue Enforcement and Protection Program and the requirements thereunder as enacted by Sections 35 and 36 of Chapter 233 of the Acts and Resolves of 1983 the LRTA must obtain an attestation from a provider of goods or services that said provider is in compliance with all laws of the Commonwealth relating to taxes.

According to the law any person or company failing to execute the attestation clause shall not be allowed to obtain a contract.

THE ATTESTATION CLAUSE BELOW MUST BE SUBMITTED WITH YOUR BID.

Note: Any questions concerning the law or its implementation may be directed to the Massachusetts Department of Revenue, Leverett Saltonstall Bldg., 100 Cambridge Street, Boston, Massachusetts 02204, TELEPHONE: # (617) 727-4201.

REQUIRED ATTESTATION CLAUSE

Pursuant to M.G.L. Ch. 62C, Section 49A I certify under the penalties of perjury that I, to the best knowledge and belief, have filed all state tax returns and paid all state taxes required under the law.

** Social Security Number
Or Federal Identification No.

*Signature of Individual or Corporate Name

By: _____
Corporate Officer (if applicable)

*Approval of a contract or other agreement may not be granted unless this certification clause is signed by the applicant.

** Your Social Security number may be furnished to the Massachusetts Department of Revenue to determine whether you have met tax filing or tax payment obligations. Providers who fail to correct their non-filing or delinquency will not have a contract or other agreement issued, renewed, or extended This request is made under the authority of Mass. G.L.C.62cs. 49a.

Privacy Act. The Contractor agrees to comply with, and assures the compliance of its employees with the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. section 552a. The Contractor also agrees to include these requirements in each subcontract.

Access to Records. The following access to records requirements apply to this Contract:

1. Contractor agrees to provide the Authority, FTA Administrator, the Comptroller General of the United States or any of their duly authorized representatives with access to any books, documents, papers and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts and transcriptions.
2. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
3. The Contractor agrees to maintain all books, records, accounts and reports required under this contract for a period of not less than three years from the date of termination or expiration of this contract, except in the event of litigation or settlement of claims arising from the performance of this contract, in which case Contractor agrees to maintain same until the LRTA, the FTA Administrator, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto. Reference 49 CFR 18:39(I)(II).

**CONTRACTORS CERTIFICATION
CHILD CARE COMPLIANCE**

_____ (Contractor) hereby certifies that it is in compliance with Chapter 521 of the Acts of 1990, as amended by Chapter 329 of the Acts of 1991, and the regulations, 102 CMR 12.00 promulgated pursuant thereto.

_____ There is a program for child care in compliance with these regulations.

_____ There are fewer than 50 full-time people employed in this company.

Name of Firm

Signature

Name and Title (print or type)

Date

LOWELL REGIONAL TRANSIT AUTHORITY
Certification Regarding Lobbying

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies to the best of his or her knowledge and belief. that:

1. No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement and the extension, renewal, continuation, amendment or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for making lobbying contacts to an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL. "DISCLOSURE FORM TO REPORT LOBBYING" in accordance with its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/9/96). Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1996 (P.L. 104-65, to be codified at 2 U.S.C. 1601, et seq.)].
3. The undersigned shall require that the language of this certification be included in the award documents for all sub awards at all tiers (including subcontracts, sub grants, and contracts under grants, loans, and cooperative agreements) and that all sub recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. section 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure. [Note: Pursuant to 31 U.S.C. section 1352 (c)(1) -(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$ 10,000 and not more than \$100,000 for each such expenditure or failure.]

The Contractor certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.A. section 3801, et seq., apply to this certification and disclosure, if any.

Signature of Contractor's Authorized Official:_____

Name and Title of Contractor's Authorized Official:_____

Date:_____

LOWELL REGIONAL TRANSIT AUTHORITY

Certificate

IMPLEMENTATION OF CLEAN AIR ACT

By signing this Bid/Proposal, the Bidder/Proposer will be deemed to have stipulated as follows:

1. The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. sec 7401 et seq. The Contractor agrees to report each violation to the Authority and understands and agrees that the Authority will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.
2. The Contractor agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

Contractor: _____

Title: _____

Date: _____

LOWELL REGIONAL TRANSIT AUTHORITY

SPECIAL REQUIREMENTS AND CONDITIONS

I herein certify that I have read and comply with all requirements included in this IFB. I further understand that any contract arising out of this IFB is subject to assistance from the Federal Transit Administration (FTA), Commonwealth of Massachusetts and the LRTA member municipalities. I further understand that any contract arising out of this IFB includes the Advertisement for IFB; the IFB Documents; Plans and Specifications and the Bidder's responses to all requirements of the IFB. All Massachusetts and FTA Regulations appropriate and pertinent to this type of solicitation whether or not contained in the bid documents will be complied with.

Firm:_____ By:(signature)_____

Address:_____ Name:_____

_____ Title: _____

Telephone:_____ Date:_____

**CERTIFICATION REQUIREMENT FOR PROCUREMENT OF STEEL, IRON, OR
MANUFACTURED PRODUCTS**

Certificate of Compliance with 49 U.S.C. 5323(j)(1)

The bidder hereby certifies that it will meet the requirements of 49 U.S.C. 5323(j)(1) and the applicable regulations in 49 CFR Part 661.

Date_____

Signature_____

Company Name_____

Title_____

Certificate of Non-Compliance with 49 U.S.C. > 5323(j)(1)

The bidder hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j)(1), but it may qualify for an exception pursuant to 49 U.S.C. 5323(j)(2)(B) or (j)(2)(D) and the regulations in 49 CFR 661.7.

Date_____

Signature_____

Company Name_____

Title_____

BONDING REQUIREMENTS

(a) Bid security equivalent to five (5) percent of the bid price must accompany the Bid. The "bid security" shall consist of a firm commitment such as a bid bond, certified, treasurer's, or cashier's check, issued by a responsible bank or trust company, payable to the Lowell Regional Transit Authority, as assurance that the Proposer will, upon acceptance of his bid, execute such contractual documents as may be required within the time specified.

(b) A performance bond on the part of the Contractor for one hundred (100) percent of the contract price. A "performance bond" is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under the contract.

(c) A payment bond on the part of the contractor for one hundred (100) percent of the contract price. A "payment bond" is one executed in connection with a contract to assure payment, as required by law, of all persons supplying labor and material in the execution of the work provided for in the contract. Payment bond amounts required from Contractors are as follows:

(1) 50% of the contract price if the contract price is not more than \$1 million;

(2) 40% of the contract price if the contract price is more than \$1 million but not more than \$5 million; or

(3) \$2.5 million if the contract price is more than \$5 million.

d. A cash deposit, certified check or other negotiable instrument may be accepted by a grantee in lieu of performance and payment bonds, provided the grantee has established a procedure to assure that the interest of FTA is adequately protected. An irrevocable letter of credit would also satisfy the requirement for a bond.

Signature: _____

LOWELL REGIONAL TRANSIT AUTHORITY

BIDDERS CERTIFICATION REGARDING PAYMENT OF PREVAILING WAGES

The undersigned bidder hereby certifies, under the pains and penalties of perjury, that the foregoing bid is based upon the payment to laborers to be employed on the Project of wages in an amount no less than the applicable prevailing wage rates established for the Project by the Massachusetts Department of Labor and Industries and the Federal Davis-Bacon wage rates.

Where either rates may conflict, the higher of the two rates will be applied to any applicable trades or labor class.

The undersigned bidder agrees to indemnify the Lowell Regional Transit Authority (the awarding authority) for, from and against any loss, expense, damages, actions or claims, including any expense incurred in connection with any delay or stoppage of the Project work, arising out of or as a result of (1) the failure of the said bid to be based upon the payment of the said applicable prevailing wage rates or (2) the failure of the bidder, if selected as the Contractor, to pay laborers employed in the Project said applicable prevailing wage rates.

Dated: _____ Name of Bidder: _____

Signature: _____

Name: _____

Title: _____

PROTEST PROCEDURE INFORMATION

Protests will be accepted only from prospective proposers or bidders whose direct economic interest would be affected by the award of a contract or by failure to award a contract. Any protests shall be in writing, submitted to the Administrator of the Lowell Regional Transit Authority, 115 Thorndike St., Lowell MA 01852-3308 and shall be submitted within the time limits specified in these procedures. Any protest that is not submitted in conformance with these procedures is null and void and shall not be considered.

All Protests shall include;

1. The name and address of the protestor;
2. The solicitation or project number, or description;
3. A detailed statement as to the nature of the protest.

Protests Prior to Bid/Proposal Opening: A protest based on alleged unduly restrictive specifications, alleged improprieties or other similar situations before bid or proposal opening, will be submitted so that it is received by the LRTA Administrator no later than five (5) full working days before the specified opening of the bids or proposals. A decision in writing by the LRTA Administrator or his designee will be returned to the protesting party in a timely manner prior to the bid/proposal opening if possible.

In the event a timely decision cannot be made, the LRTA may postpone the bid/proposal opening. All bids/proposals will remain unopened until the protest has been resolved, but no additional bids/proposals shall be accepted or modified after the originally scheduled day and time of opening. An addendum changing the day and time of the opening will be sent to each person/company that has requested and received a copy of the specifications.

Protests After Bid/Proposal Opening: A protest arising after the opening of the bids based upon grounds that were known or should have been known, must be submitted so that it is received by the LRTA Administrator within five (5) working days after notification of the apparent low responsive and responsible bidder. Any such protest must contain a statement of the grounds for protest and all supporting documentation. A decision in writing by the LRTA Administrator or his designee will be returned to the protesting party in a timely fashion.

Upon receipt of such protest the LRTA will immediately determine if the execution of a contract should be postponed. If it is postponed, the LRTA will notify all bidders that a protest has been filed and that the execution of the bid contract is postponed until the LRTA has issued its decision. Any protest may be withdrawn at any time before the LRTA has issued its decision.

The decision of the LRTA Administrator is final. No further appeals will be considered by the LRTA.

Appeals to the Federal Transit Administration (FTA): As provided for by FTA Circular 4220.1F, FTA's review of any protest will be limited to:

- a. FTA will only review protests regarding the alleged failure of the Grantee (LRTA) to have written protest procedures or alleged failure to follow such procedures.
- b. Alleged violations on other grounds are under the jurisdiction of the appropriate State or local administrative or judicial authorities. Alleged violations of a specific Federal requirement that provides an applicable complaint procedure shall be submitted and processed in accordance with that specific Federal regulation.
- c. FTA will only review protests submitted by an interested party. An "interested party" means an actual or prospective bidder or officer whose direct economic interest would be affected by the award of the contract or by failure to award the contract.

REQUIRED CLAUSES AND CONTRACT PROVISIONS

Inclusion: It is deemed to be understood and acknowledged that any contract which may be awarded and entered into between the Proposer/Bidder and the LRTA as a result of this solicitation shall include and incorporate any ADVERTISEMENT OF BID/RFP; THE REQUEST FOR BID/PROPOSAL/QUOTES; THE SPECIFICATIONS; ALL CERTIFICATIONS; ATTESTATIONS; NOTARIZED STATEMENTS; PRICE PROPOSAL FORM; SERVICE PROPOSAL NARRATIVES; AND ALL ADDENDUM TO THE BID/RFP; AND THE FOLLOWING REQUIRED CLAUSES AND CONTRACT PROVISIONS:

Contract Changes: Any proposed change in this contract shall be submitted to the Authority for its prior approval.

Interest of Members of or Delegates to Congress: No member of or delegate to the Congress of the United States shall be admitted to any share or part of this contract or to any benefit arising therefrom.

Prohibited Interest: No member, officer or employee of the Authority or of a local public body which is a member of the Authority during his or her tenure or one year thereafter shall have any interest, direct or indirect, in this contract or the proceeds thereof.

Financial Assistance: This contract is subject to financial assistance contracts between the Authority and the U.S. Department of Transportation, FEDERAL TRANSIT ADMINISTRATION (FTA) and the proposer agrees that it shall be subject to any appropriate & applicable provisions of said financial assistance contracts. The proposal & award of contract is also subject to a financial assistance agreement contract between the Authority and the Commonwealth of Massachusetts,

Ineligible Contractors: The proposer hereby certifies that neither it, nor any of its subcontractors used in performing this contract, are listed on the list of ineligible contractors maintained by the Comptroller General of the United States.

Notices: Notices to the Authority should be addressed to: Mr. David Bradley, LRTA ADMINISTRATOR, THE LOWELL REGIONAL TRANSIT AUTHORITY, 115 THORNDIKE STREET, LOWELL, MASS. 01852-3308. Notices to the successful PROPOSER/BIDDER shall be as indicated in the PROPOSAL FORM as submitted and signed by the successful proposer.

No Obligation by the Federal Government: (1) The Purchaser and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this contract and shall not be subject to any obligations or liabilities to the Purchaser, Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract. (2) The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

BID in Effect: This Bid shall remain in effect until thirty days (30) after the bid opening.

Conservation: The contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

Federal changes: Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Agreement (Form FTA MA (2) dated October, 1995) between Purchaser and FTA, as they may be amended or promulgated from time to time during the term of this contract. Contractor's failure to so comply shall constitute a material breach of this contract.

Program Fraud and False or Fraudulent Statements or Related Acts:

(1) The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.A. sec. 3801 et seq. and ASTUTE regulations, "Program Fraud Civil Remedies," 49 C.P.R. Part 31, apply to its actions pertaining to this Project. Upon execution of the underlying contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, or it may make, or causes to be made, pertaining to the underlying contract or the FTA assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

(2) The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.A. sec. 5307, the Government reserves the right to impose the penalties of 18 U.S.A. sec. 1001 and 49 U.S.A. sec. 5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate.

(3) The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

Seismic Safety: The contractor agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation Seismic Safety Regulations 49 CFR Part 42 and will certify to compliance to the extent required by the regulation. The contractor also agrees to ensure that all work performed under this contract including work performed by a subcontractor is in compliance with the standards required by the Seismic Safety Regulations and the certificate of compliance issued on the project.

Clean Air: (1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. The Contractor agrees to report each violation to the Purchaser and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office. (2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance by FTA.

Clean Water: (1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. The Contractor agrees to report each violation to the Authority and understands and agrees that the Authority will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office. (2) The Contractor also agrees to include requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

Recovered Materials. The contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of items designated in Subpart B of 40 CFR Part 247.

Compliance with Copeland Act requirements, the contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

Use of United States -Flag Vessels: The contractor agrees:

- A. To use privately owned United States-Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to the underlying contract to the extent such vessels are available at fair and reasonable rates for United States - Flag commercial vessels;
- B. To furnish within 20 working days following the date of loading for shipments originating within the United States or within 30 days following the date of leading for shipments originating outside the United States, a legible copy of cargo described in the preceding paragraph to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to the LRTA (through the contractor in the case of a subcontractor's bill-of-lading.)
- C. To include these requirements in all subcontracts issued pursuant to this contract when the subcontract may involve the transport of equipment, material, or commodities by ocean vessel.

Privacy Act: The Contractor agrees to comply with, and assures the compliance of its employees with the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. section 552a. The Contractor also agrees to include these requirements in each subcontract.

Access to Records: The following access to records requirements apply to this Contract:

1. Contractor agrees to provide the Authority, FTA Administrator, the Comptroller General of the United States or any of their duly authorized representatives with access to any books, documents, papers and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts and transcriptions.
2. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
3. The Contractor agrees to maintain all books, records, accounts and reports required under this contract for a period of not less than three years from the date of termination or expiration of this contract, except in the event of litigation or settlement of claims arising from the performance of this contract, in which case Contractor agrees to maintain same until the LRTA, the FTA Administrator, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto. Reference 49 CFR 18:39(1) (11).

Price/Cost Analysis: Prices may be subject to a price/cost evaluation which shall include the review of all costs and data associated with the bid/proposal and an ensuing contract. The evaluation will be performed by the LRTA or its designated representative (private auditing firm). Bidders/ Proposers shall supply all pertinent data as requested.

State and Local Law Disclaimer: The use of many of the suggested clauses are not governed by Federal law, but are significantly affected by State law. The language of the suggested clauses may need to be modified depending on state law, and that before the suggested clauses are used in the grantees procurement documents, the grantees should consult with their local attorney.

Incorporation of Federal Transit Administration (FTA) Terms: The preceding provisions include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, set forth in the FTA Circular 4220, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any LRTA requests which would cause LRTA to be in violation of the FTA terms and conditions.

Signature: _____

BREACHES AND DISPUTE RESOLUTION

Disputes. Disputes arising in the performance of this Contract which are not resolved by agreement of the parties shall be decided in writing by the authorized representative of the LRTA's Administrator. This decision shall be final and conclusive unless within five days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the Administrator. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the Administrator shall be binding upon the Contractor and the Contractor shall abide by the decision.

Performance During Dispute. Unless otherwise directed by LRTA, Contractor shall continue performance under this Contract while matters in dispute are being resolved.

Claims for Damages. Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefor shall be made in writing to such other party within a reasonable time after the first observance of such injury or damage.

Remedies. Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the LRTA and the Contractor arising out of or relating to this agreement or its breach will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the Commonwealth of Massachusetts.

Rights and Remedies. The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the LRTA, the Architect or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

Signature: _____

LOWELL REGIONAL TRANSIT AUTHORITY

REQUEST AND APPEAL PROCEDURES

Changes in specifications: Changes to the Bid/Proposal documents and specifications will only be made by written addendum, and all proposers/bidders will be notified if any changes are made. It is the responsibility of the bidder to ascertain if all addendum have been received prior to the submission of the Proposal/Bid.

Requests for changes, clarification and approved equals of the Bid/Proposal documents, specifications and requirements must be received by the LRTA in writing no later than the deadline for written requests for changes, clarifications and/or approved equals that is listed on the "Procurement Schedule" (unless changed by a formal written addendum issued by the LRTA).

The LRTA intends to reply in writing to any properly received request for changes, clarifications or approved equals to the Proposal/Bid documents, specifications or requirements no later than five days prior to due date of proposal/bid receipt.

The LRTA reserves the right to postpone the Proposal/Bid opening for its convenience and to reject any and all proposals/bids.

Appeal from the decision of the LRTA must be in writing to the LRTA and if received less than four full working days before bid opening then it will not be considered.

Signature:_____

TERMINATION

- a. Termination for Convenience:** The LRTA may terminate this contract, in whole or in part, at any time by written notice to the Contractor. The Contractor shall be paid its costs, including contract closeout costs, and profit on work performed up to the time of termination. The Contractor shall promptly submit its termination claim to LRTA to be paid the Contractor. If the Contractor has any property in its possession belonging the LRTA the Contractor will account for the same, and dispose of it in the manner the LRTA directs.
- b. Termination for Default:** If the contractor does not deliver supplies or equipment or vehicles in accordance with the contract delivery schedule, or, if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the LRTA may terminate this contract for default. Termination shall be effected by serving a notice of termination on the contractor setting forth the manner in which the contractor is in default. The contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract.

If it is later determined by the LRTA that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, events which are not the fault of or are beyond the control of the Contractor, the LRTA after setting up a new delivery of performance schedule, may allow the Contractor to continue work, or treat the termination as a termination for convenience.

- c. Opportunity to Cure:** The LRTA, in its sole discretion may, in the case of a termination for breach or default, allow the Contractor five (5) days in which to cure the defect. In such case, the notice of termination will state the time period in which cure is permitted and other appropriate conditions.

If Contractor fails to remedy to LRTA's satisfaction the breach or default or any of the terms, covenants, or conditions of this contract within five (5) days after receipt by Contractor of written notice from LRTA setting forth the nature of said breach or default, LRTA shall have the right to terminate the Contract without further obligation to Contractor. Any such termination for default shall not in any way operate to preclude LRTA from also pursuing all available remedies against Contractor and its sureties for said breach or default.

- d. Waiver of Remedies for any Breach:** In the event that LRTA elects to waive its remedies for any breach by Contractor of any covenant, term or condition of this Contract, such waiver by LRTA shall not limit LRTA's remedies for any succeeding breach of that or of any other term, covenant, or condition of this Contract.
- e. Termination for Default:** If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract or any extension or fails to complete the work within this time, or if the Contractor fails to comply with any other provisions of this contract, the LRTA may terminate this contract for default. The LRTA shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of the default. In this event, the LRTA may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the LRTA resulting from the Contractor's refusal or failure to complete the work within specified time, whether or not the Contractor's right to proceed with the work is terminated. The liability includes any increased costs incurred by the LRTA in completing the work.

The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause if:

1. The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include: acts of God, acts of the LRTA, acts of another Contractor in the performance of a contract with the LRTA, epidemics, quarantine restrictions, strikes, freight embargoes; and
2. The contractor, within five days from the beginning of any delay, notified the LRTA, in writing of the causes of delay. If in the judgment of the LRTA, the delay is excusable, the time for completing the work shall be extended. The judgment of the LRTA shall be final and conclusive on the parties, but subject to appeal under the Disputes clauses.

If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Recipient.

DAVIS-BACON ACT
40 USC§276a -276a-5 (1995)
29 CFR§ 5 (1995)

Applicability to Contract

(The language in this clause is mandated under the DOL regulations at 29 C.F.R.§5.5.)

(1) **Minimum wages** - (i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iii) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account asset for the meeting of obligations under the plan or program.

(iv)(A) The contracting officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (1)(iv) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(2) **Withholding** - The LRTA shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the LRTA may, after written notice to the contractor, sponsor, applicant, or owner,

take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) **Payrolls and basic records** - (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid.

Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the LRTA for transmission to the Federal Transit Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR part 5. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, DC 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be maintained under 29 CFR part 5 and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Federal Transit Administration or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees - (i) Apprentices - Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division of the U.S. Department of Labor determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with

that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees - Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity - The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) **Compliance with Copeland Act requirements** - The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) **Subcontracts** - The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the Federal Transit Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) **Contract termination: debarment** - A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) **Compliance with Davis-Bacon and Related Act requirements** - All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) **Disputes concerning labor standards** - Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(10) **Certification of eligibility** - (i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

40 U.S.C. § 327 - 333 (1995)

29 C.F.R. § 5 (1995)

29 C.F.R. 1926 (1995)

Model Clauses/Language

Pursuant to Section 102 (Overtime):

(These clauses are specifically mandated under DOL regulation 29 C.F.R. § 5.5 and when preparing a construction contract in excess of \$2,000 these clauses should be used in conjunction with the Davis-Bacon Act clauses as discussed previously. For non-construction contracts, this is the only section required along with the payroll section.)

(1) **Overtime requirements** - No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) **Violation; liability for unpaid wages; liquidated damages** - In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$ 10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

(3) **Withholding for unpaid wages and liquidated damages** - The (write in the name of the grantee or recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) **Subcontracts** - The contractor or subcontractor shall insert in any subcontracts the clauses set forth in this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in this section.

(Section 102 non construction contracts should also have the following provision:)

(5) **Payrolls and basic records** - (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid.

Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

Section 107 (OSHA):

(This section is applicable to construction contracts only)

Contract Work Hours and Safety Standards Act - (i) The Contractor agrees to comply with section 107 of the Contractor Work Hours and Safety Standards Act, 40 U.S.C. section 333, and applicable DOL regulations, " Safety and Health Regulations for Construction " 29 C.F.R. Part 1926. Among other things, the Contractor agrees that it will not require any laborer or mechanic to work in unsanitary, hazardous, or dangerous surroundings or working conditions.

(ii) **Subcontracts** - The Contractor also agrees to include the requirements of this section in each subcontract. The term "subcontract" under this section is considered to refer to a person who agrees to perform any part of the labor or material requirements of a contract for construction, alteration or repair. A person who undertakes to perform a portion of a contract involving the furnishing of supplies or materials will be considered a "subcontractor" under this section if the work in question involves the performance of construction work and is to be performed: (1) directly on or near the construction site, or (2) by the employer for the specific project on a customized basis. Thus, a supplier of materials which will become an integral part of the construction is a "subcontractor" if the supplier fabricates or assembles the goods or materials in question specifically for the construction project and the work involved may be said to be construction activity. If the goods or materials in question are ordinarily sold to other customers from regular inventory, the supplier is not a "subcontractor." The requirements of this section do not apply to contracts or subcontracts for the purchase of supplies or materials or articles normally available on the open market.

PERFORMANCE BOND

The contractor shall be required by the Authority to furnish a Performance Bond in an amount equal to 100% of the compensation payable during the contract period. The Performance Bond, if required, shall be payable to the Lowell Regional Transit Authority and shall be issued by a surety company authorized to do business in the State of Massachusetts.

The Performance Bond shall provide that in the event the Contractor fails to perform or abandons the Agreement, the Authority shall have the Agreement completed as expeditiously as possible and necessary and shall bring action against the Bond for additional damages incurred in administrative time expended.

The undersigned certifies understanding of the above and agrees to comply with the conditions if imposed.

Name and title

Company name

Address

Authorized signature

Date: _____

SECTION 004000
BID BOND FORM (GENERAL BIDDER)

BID BOND
(Attached herewith 3 pages)

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____
As Principal and _____, of the City of _____
State of _____, a corporation existing under the laws
of the State of _____, and authorized to transact business in the
Commonwealth of Massachusetts, as Surety, are held and firmly bound unto LOWELL REGIONAL TRANSIT
AUTHORITY, LOWELL, MASSACHUSETTS, hereinafter called the OBLIGEE, in the sum of
_____ Dollars (\$ _____)

Lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind
ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the
accompanying Bid dated _____, 2021, for the GALLAGHER TERMINAL & MAGUIRE
TRANSPORTATION CENTER ROOFING REPLACEMENT PROJECTS, 115 and 117 THORNDIKE STREET.

NOW THEREFORE, the condition of this Bond shall be such that if the Principal shall furnish to the Oblige
Bonds with good and sufficient surety and insurance certificates and copies of the policies as may be
required by the Contract Documents, and upon due acceptance of said Bid and award for a contract to
him by the Oblige, shall execute and deliver the Agreement, within the five (5) days (Saturdays, Sundays
and legal holidays excluded), including any extension of time granted in writing by the Oblige, in the forms
and in the amounts as appropriate, all as required by the Contract Documents, then this Bond shall be void;
otherwise, this Bond shall be and shall remain in full force and effect and the penal sum thereof shall
be forfeited and paid to the Oblige in the amount set forth below.

The Principal and Surety agree to pay to the Oblige the difference between the amount of said Bid, as
accepted by the Oblige, and any higher amount for which the required work shall be contracted for
by the Oblige, together with any additional advertising costs, legal fees, and any and all other fees and
expenses incurred by the Oblige, or to furnish such Bonds, or to furnish such insurance certificates and
copies of the policies; provided, however, that (1) the obligation of the Surety shall not exceed the stated
principal amount of this Bond; and (2) if the Oblige should not procure an executed contract with
any other person for the performance of the work contemplated in said Bid, as accepted by the
Oblige, upon the same terms and conditions, other than price as provided in the Contract Documents,
within the period provided in the Contract Documents during which no bid or bidders may be
withdrawn, whether because of the lack of other bids, or because of the inability or refusal of any other
bidder to enter into an appropriate contract, or because of the cost under any higher bid would be
greater than the Oblige shall determine, in its sole discretion, that it can afford, then the Principal and the
Surety agree to pay to the Oblige the full amount of this Bond as liquidated damages.

It is the intention of the parties hereto to be legally bound by this instrument.
IN WITNESS WHEREOF, the above bound parties have executed this instrument under their several
seals this _____ day of _____, 2021, the name and corporate seal of
each corporate party being hereto affixed and these presents duly signed by its undersigned
representative, pursuant to authority of its governing body.

ATTEST:

Secretary-Assistance Secretary

Name of Corporation-Contractor

President-Vice President

(AFFIX CORPORATE SEAL)

WITNESS

(Signature of Individual-Contractor)

Trading and doing business as:

(SEAL)

WITNESS

Partnership-Contractor (SEAL)

By _____ Partner (SEAL)

By _____ Partner (SEAL)

By _____ Partner (SEAL)

Business Address _____

Of Bidder _____

ATTEST
WITNESS

Secretary

Surety

*Attorney-In-Fact

(AFFIX CORPORATE SEAL)

*Attach an appropriate Power of Attorney,
dated same as the bond, evidencing the authority of the
Attorney-In-Fact to act in behalf of the Surety
Company.

SECTION 005000
CONSTRUCTION CONTRACT

CONSTRUCTION CONTRACT

(Attached herewith 1 page)

LOWELL REGIONAL TRANSIT AUTHORITY

CONTRACT

Clause 1 - This Agreement made this _____ day of _____, in the year two thousand twenty-one (2021), between the Lowell Regional Transit Authority (LRTA) and herein called the Contractor.

Clause 2 - Witnesseth, that the parties (LRTA & Contractor) to this Agreement, each in consideration of the agreement on the part of the other herein contained, do hereby agree, the LRTA for itself, and said Contractor for itself and its successors and assigns, as follows:

The Contractor agrees to furnish all equipment, machinery, tools and labor, to furnish and deliver all materials required to be furnished and delivered in and about the Gallagher Terminal & Maguire Transportation Center Roofing Replacement Projects, 115 Thorndike Street, Lowell MA and to do and perform all work as shown on the Contract Drawings and as further described in the Project Specifications and all other Contract Documents in strict conformity to the provisions in the Contract Documents and all applicable local, state and federal laws and regulations, including, but not limited to, the Notice to Bidders dated August 2nd, 2021, Bid Form, Specifications, General and Supplementary Conditions, Addenda, Certifications and Attestations hereto attached, and to the plans and drawings to therein. **All Contract Documents, including, but not limited to, Plans, Drawings, Specifications, Conditions, Notice to Bidders, Addenda, Certifications and Attestations and Bid Form are hereby specifically made a part of this Agreement as fully and to the same effect as if the same had been set forth at length herein, to which all such documents Contractor shall be bound.**

Clause 3 - In consideration of the foregoing premises and such other consideration the receipt and sufficiency of which are hereby acknowledged, the LRTA agrees to pay and the Contractor agrees to receive as full compensation for everything furnished and done by the Contractor under this Agreement, including all work required but not shown on the plans for the items herein mentioned, and also for all loss or damages arising out the nature of the work aforesaid, or from the action of the elements or any delay or from an unforeseen obstruction or any difficulty encountered in the prosecution of the Contract work, and for all risks of every description connected with the Project work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the Project work as herein specified, and for well and faithfully completing the Project work, and the whole thereof, as herein provided, such prices as are set out in the accompanying Bid Form.

In witness whereof, the said Contractor and the LRTA have caused these presents to be signed by their duly authorized representative (s) in their name and behalf and their corporate seals to be hereto affixed:

Lowell Regional Transit Authority

Contractor:

By:

Approved as to form by: _____
LRTA Legal Counsel

SECTION 007000

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

AIA DOCUMENT A201 - 2017

(Attached herewith 38 pages)



AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

THE OWNER:

(Name, legal status and address)

THE ARCHITECT:

(Name, legal status and address)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

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

§ 1.1.4 The Project

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

§ 1.1.5 The Drawings

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

§ 1.1.6 The Specifications

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

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 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 indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining

provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

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

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building

information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the

site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's

capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, 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.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes

remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

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

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

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

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 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 Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the

time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under

Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the

Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

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

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate

Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

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

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The

Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

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

§ 8.2 Progress and Completion

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

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

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

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable

by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The

foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers

to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not

constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the

endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The

Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§ 11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the

Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1** Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2** An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3** Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4** The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1** cease operations as directed by the Owner in the notice;
- .2** take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3** except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section

15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly

consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

SECTION 008000

SUPPLEMENTARY CONDITIONS

Amending the General Conditions of the Contract for Construction
AIA Document A201 (2017 edition)

I. SUPPLEMENTARY CONDITIONS

The following addendum supplements, modifies, deletes and/or adds to the General Conditions. Where any Article, Paragraph or subparagraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such Article, Paragraph, or Subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any Article, Paragraph, or subparagraph in the General Conditions is amended, voided or superseded by any of the following paragraphs, the provisions of such Article, Paragraph or subparagraph not so amended, voided, or superseded shall remain in effect.

II. MODIFICATIONS TO VARIOUS ARTICLES OF THE AIA CONDITIONS

ARTICLE 1 GENERAL PROVISIONS

- 1.1.1 In the first sentence, delete “are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and” after “The Contract Documents”.

Insert “between the Owner and Contractor (hereinafter the Agreement)” after “consist of the Agreement”.

In the last sentence:

Delete “Unless specifically enumerated in the Agreement”.

Delete “not” after “Contract Documents do”.

Delete “other” after “sample forms,”.

Delete “or” after “or proposal,” and insert “and”.

Delete “bidding or proposal requirements” after “relating to” and insert “those documents.”

1.1.8 Delete “Claims” and insert “claims”.

Delete “and shall not be liable for results of interpretations or decision rendered in good faith.”.

1.2.1.2 Add to the end of the sub-section:

All Work mentioned or indicated in the Contract Documents shall be performed by the Contractor as part of this Contract unless it is specifically indicated in the Contract Documents that such Work is to be done by others. Should the Drawings or the Specifications disagree in themselves or with each other, the Contractor shall provide the better quality or greater quantity of Work unless otherwise directed by written addendum to the Contract.

1.2.1 Add to the end of the sentence:

, except that the performance of filed sub-trade work shall comply with the provisions of chapter 149 of the General Laws of the Commonwealth of Massachusetts. The Contractor and all Subcontractors shall refer to all of the Drawings, including those showing primarily the Work of the mechanical, electrical and other specialized trades, 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.

1.2.4 Add the following new sub-sections 1.2.4 to 1.2.11 as follows:

-1.2.11

§ 1.2.4 All indications or notations which apply to one of a number of similar situations, materials or processes shall be deemed to apply to all such situations, materials or processes wherever they appear in the Work, except where a contrary result is clearly indicated by the Contract Documents.

§ 1.2.5 Where codes, standards, requirements and publications of public and private bodies are referred to in the Specifications, references shall be understood to be to the latest revision prior to the date of receiving bids, except where otherwise indicated.

§ 1.2.6 Where no explicit quality or standards for materials or workmanship are established for Work, such Work is to be of good quality for the intended use and consistent with the quality of the surrounding Work and of the construction of the Project generally.

§ 1.2.7 All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's written or printed directions and instructions unless otherwise indicated in the Contract Documents.

§ 1.2.8 The Mechanical, Electrical and Fire Protection Drawings are diagrammatic only, and are not intended to show the alignment, physical locations or configurations of such Work. Such Work shall be installed without additional cost to the Owner to clear all obstructions, permit proper clearances for the Work of other trades, and present an orderly appearance where exposed. Prior to beginning such Work, the Contractor shall prepare coordination drawings showing the exact alignment, physical location and configuration of the Mechanical, Electrical and Fire Protection installations and demonstrating to the Contractor's satisfaction that the installations will comply with the preceding sentence. A copy of the drawings shall be submitted to the Architect, and the Contractor shall revise and resubmit the drawings if so directed by the Architect.

§ 1.2.9 Exact locations of fixtures and outlets shall be obtained from the Architect as provided in subparagraph 3.2.5 before the Work is roughed in; Work installed without such information from the Architect shall be relocated at the Contractor's expense.

§ 1.2.10 Test boring or soil test information included with the Contract Documents or otherwise made available to the Contractor was obtained by the Owner for use by the Architects in the design of the Project or Work. The Owner does not hold out such information to the Contractor as a completely accurate indication of subsurface conditions, and no claim for extra cost or extension of time resulting from a reliance by the Contractor on such information shall be allowed except as provided in subparagraph 3.7.4.

§ 1.2.11 Where the Work is to fit with existing conditions or work to be performed by others, the Contractor shall fully and completely join the Work with such conditions or work, unless otherwise specified. Owner provided drawings showing existing conditions or construction are based on available documents and are not guaranteed to show actual existing conditions.

1.5.1 Delete 1.5.1 and replace as follows:

§ 1.5.1 All Drawings, Specifications and copies thereof furnished by the Owner are and shall remain the Owner's property. They are to be used only with respect to this Project and are not to be used on any other project without the prior written consent of the Owner. With the exception of one contract set for each party to the Contract, such documents are to be returned or suitably accounted for to the Owner at the completion of the Work. Submission or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of any reserved rights.

1.8 Delete “using or relying party’s” in Section 1.8 and replace with “Contractor’s”

ARTICLE 2 OWNER

2.1.2 Delete sub-section 2.1.2.

2.2.1 - Delete subsections 2.2.1 through 2.2.4
2.2.4

2.3.5 Delete the last sentence.

2.3.6 Add to the end of the sub-section as follows:

All additional copies will be furnished upon request at the cost of reproduction.

2.4 Delete from the last sentence “, except to the extent required by Section 6.1.3” and add as follows:

The Contractor shall resume the Work after such stoppage promptly upon written notice to do so from the Owner. The Contractor shall remain responsible for maintaining the progress of the Work and shall not be entitled to any increase in the Contract Sum or Contract Time. The Contractor shall be responsible for all costs incurred by the Owner attributable to such an order to stop the Work.

2.5 Add to the end of the section as follows:

The rights of the Owner hereunder are in addition to any other rights set forth in the Contract Documents or available at law or in equity.

ARTICLE 3 CONTRACTOR

3.2.1 Delete “generally” after “the site, become”.

Add to the end of the sub-section as follows:

The Contractor shall not be entitled to any change in the Contract Time or Contract Sum on account of its failure, or that of any Subcontractor, to comply with the foregoing requirements.

3.2.2 Delete the beginning of the second sentence as follows:

These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however,

Delete the last sentence and replace as follows:

If the Contractor performs any construction activity that it knows or should know involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Architect, the Contractor shall assume appropriate responsibility for such performance and shall bear responsibility for the costs of any required correction.

3.2.3 Delete “not” after “Contractor is”.

Delete “, but” after “public authorities” and create new sentence beginning with “The Contractor shall promptly”.

3.2.4 Delete “claims” after “the Contractor shall make” and insert “a claim”.

Delete the last sentence.

3.2.5 Add new sub-section 3.2.5 as follows:

§ 3.2.5 Any claim by the Contractor or Subcontractors that, in submitting their respective bids, they did not include all items as shown in the Contract Documents will be given no consideration for an adjustment of any kind. If any item is specified in a Section which would not normally furnish this item it shall be the responsibility of the Contractor to coordinate the situation with the Subcontractor, and if the item under consideration is not to be provided by the Subcontractor it shall be the responsibility of the Contractor to provide the work in question, without any additional cost to the Owner.

3.3.1 Add to the end of the first sentence as follows:

which shall not be less than such state of skill and attention generally rendered by the contracting profession for projects similar to the Project in scope, difficulty and location. The Contractor shall adequately staff the Project to properly and thoroughly manage, schedule and supervise all construction activities.

3.3.2 Add the last sentence as follows:

This obligation shall also extend to the presence on the Site of suppliers of materials or equipment, their employees, contractors, and agents engaged in the Work.

3.4.3 Add to the end of the second sentence as follows:

, and the Contractor shall ensure that all workers to be employed on the Project have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration (OSHA) of at least 10 hours. The Contractor shall be responsible for maintaining all safety precautions at and around the Project site. On the Owner's request, the Contractor shall permanently remove from the Project site any employee of the Contractor or any Subcontractor who fails to comply with the requirements of the Contract Documents or whose presence or behavior is deemed by the Owner to be adverse to the success of the Project or the Owner's interests.

3.5 Add to the end of the first sentence as follows:

and, promptly after written notification of non-conformance, shall be repaired or replaced by the Contractor with Work conforming to such requirements.

Delete the second to last sentence.

3.5.3 Add new sub-sections 3.5.3 to 3.5.9 as follows:

-3.5.9

§ 3.5.3 The Contractor shall be responsible for determining that all materials furnished for the Work meet all requirements of the Contract Documents. The Architect may require the Contractor to produce reasonable evidence that a material meets such requirements, such as certified reports of past tests by qualified testing laboratories, reports of studies by qualified experts, or other evidence which, in the opinion of the Architect, would lead to a reasonable certainty that any material used, or proposed to be used, in the Work meets the requirements of the Contract Documents. All such data shall be furnished at the Contractor's expense. This provision shall not require the Contractor to pay for periodic testing of different batches of the same material, unless such testing is specifically required by the Contract Documents to be performed at the Contractor's expense.

§ 3.5.4 If the Contractor proposes to use a material which, while suitable for the intended use, deviates in any way from the detailed requirements of the Contract Documents, the Contractor shall inform the Architect in writing of the nature of such deviations at the time the material is submitted for approval and request approval of the deviation. The Architect shall judge the design and appearance of proposed substitutes, and may refuse to approve any substitute which, in the Architect's opinion, would be out of character or otherwise inconsistent with the character or quality of design of the Project.

§ 3.5.5 In informing the Architect of deviations or substitutions, the Contractor shall provide, upon request, evidence leading to a reasonable certainty that the proposed substitution or deviation will provide a quality of result at least equal to that otherwise attainable in accordance with the Contract Documents. If, in the opinion of the Architect, the evidence presented by the Contractor does not provide a sufficient basis for such reasonable certainty, the Architect may reject such substitution or deviation without further investigation.

§ 3.5.6 Any additional cost, or any loss or damage arising from the substitution of any material or any method for those originally specified shall be borne by the Contractor, notwithstanding approval or acceptance of such substitution by the Owner or the Architect, unless such substitution was made at the written request or direction of the Owner or the Architect.

§ 3.5.7 The warranty provided in this paragraph 3.5 shall be in addition to and not in limitation of any other warranty required by the Contract Documents or otherwise prescribed by law.

§ 3.5.8 The Contractor shall procure and deliver to the Architect, no later than the date claimed by the Contractor as the date of Substantial Completion, all special warranties required by the Contract Documents. Delivery by the Contractor shall constitute the Contractor's guarantee to the Owner that the warranty will be performed in accordance with its terms and conditions.

§3.5.9 The Contractor shall guarantee all Work for a period of one year after Date of Substantial Completion, or by the terms of any special guarantee required by the Contract Documents. The Contractor shall, upon written notice from the Owner, promptly correct defective Work or Work not in accordance with the Contract Documents.

3.6.1 Add new sub-section 3.6.1 as follows:

§ 3.6.1 The project is exempt from the Massachusetts Sales Tax to the extent permitted by G.L. c.64H, §6(f). The exemption number will be provided by the Awarding Authority to the Contractor.

3.7.2 Add to the end of the sub-section as follows:

If any of the Work is required to be inspected or approved by any public authority, the Contractor shall cause such inspection or approval to be performed and shall comply with any instructions or corrections ordered by the public authority.

3.7.3 Delete “knowing it” after “performs Work” and replace with “it knows or should know”.

3.7.4 Delete sub-section 3.7.4 and replace as follows:

§ 3.7.4 Concealed or Unknown Conditions. Claims for concealed or unknown conditions shall be governed by Chapter 30, Section 39N of the General Laws of the Commonwealth of Massachusetts, as amended.

3.7.5 Delete second and last sentences.

3.8 Delete section 3.8 in its entirety.

3.9.1 In the first sentence:

Insert “, in accordance with the Contract Documents,” after “shall employ”.

Insert “at all times” after “the Project site”.

3.9.4 Add new sub-sections 3.9.4 and 3.9.5 as follows:

-3.9.5

§ 3.9.4 The Contractor shall coordinate and supervise the Work performed by Subcontractors to the end that the Work is carried out without conflict between trades and so that no trade, at any time, causes delay to the general progress of the Work. The Contractor and all Subcontractors shall at all times afford each trade, any separate contractor, or the Owner, every reasonable opportunity for the installation of Work and the storage of materials.

§ 3.9.5 The Contractor shall arrange for and attend job meetings with the Architect and such other persons as the Architect may from time to time wish to have present. The Contractor shall be represented by a principal, project manager, general superintendent or other authorized main office representative, as well as by the Contractor's own superintendent. An authorized representative of any Subcontractor or Sub-subcontractor shall attend such meetings if the representative's presence is requested by the Architect. Such representatives shall be empowered to make binding commitments on all matters to be discussed at such meetings, including costs, payments, change orders, time schedules and manpower. Any notices required under the Contract may be served on such representatives.

- 3.10.1 In the first sentence delete “promptly” after “The Contractor” and replace with “within twenty (20) days”.

In the second sentence, insert “or as requested by the Architect” after “conditions of the Work and Project”.

Add to the end of the sub-section as follows:

The construction schedule shall be in such form and contain such information as the Architect and Owner require. The construction schedule shall be resource loaded for the Contractor and all subcontractors, with each resource identified by name, description, unit of measure, and calendar assignment. For each class of work included in the Contractor’s schedule of values, the construction schedule shall show the percentage of completion to be obtained and the total dollar value of the work to be completed as of the first of each month until Substantial Completion. All calculations shall be on the basis of work in place, but not including the value of materials delivered but not in place.

- 3.10.3 Add to the end of the sub-section as follows:

The Contractor’s compliance with the construction schedule is a material obligation of the Contract.

- 3.10.4 Add new sub-sections 3.10.4, 3.10.5, and 3.10.6 as follows:

-3.10.6

§ 3.10.4 The Contractor shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner of any delays or potential delays. The construction schedule shall be updated every month (or more frequently if requested by the Owner) to reflect actual conditions (such updates are sometimes referred to in these General Conditions as "progress reports"). In the event any progress report indicates delays in achievement of any milestone date set forth in such schedule, the Contractor shall propose in written form an affirmative plan (the "Recovery Schedule") to correct the delay, including overtime and/or additional labor, if necessary, which Recovery Schedule shall indicate the date by which the progress of the Work will comply with the construction schedule, and shall be subject to the approval of the Owner and the Architect. In no event shall any progress report or Recovery Schedule constitute an adjustment in the construction schedule, Contract Time or any milestone date unless any such adjustment is agreed to by the Owner and authorized pursuant to a Change Order.

§ 3.10.5 In the event (i) that the performance of the Work, as of a milestone date, has not progressed or reached the level of completion required by the construction schedule, and (ii) the progress of the Work is not brought back into compliance with the construction schedule on the date proposed by the Recovery Schedule, or the Contractor otherwise fails to comply with the Recovery Schedule, the Owner shall have the right to order the Contractor to take corrective measures to expedite the progress of the Work, including, without limitation, (1) supplying additional manpower, equipment, and facilities, (2) working additional shifts or overtime, (3) working additional days, and (4) other similar measures (hereinafter referred to collectively as "Corrective Measures"). Such Corrective Measures shall continue until the progress of the Work complies with the stage of completion required by the Contract Documents.

§ 3.10.6 The Contractor shall not be entitled to an adjustment in the Contract Sum in connection with Corrective Measures required by the Owner under or pursuant to Section 3.10.5. The Owner may exercise the rights furnished the Owner under or pursuant to Section 3.10.5 as frequently as reasonably necessary to ensure that the Contractor's performance of the Work complies with the milestone dates set forth in the construction schedule.

3.12.6 Add to the end of the sub-section as follows:

By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals the Contractor thereby represents that the Contractor has determined and verified all dimensions, quantities, field dimensions, relations to existing work, coordination with work to be installed later, coordination with information on previously accepted Shop Drawings, Product Data, Samples, or similar submittals and verification of compliance with all the requirements of the Contract Documents. The accuracy of all such information is the responsibility of the Contractor. In reviewing Shop Drawings, Product Data, Samples, and similar submittals the Architect shall be entitled to rely upon the Contractor's representation that such information is correct and accurate.

3.12.10 Add to the end of the last sentence as follows:

, except as provided in Section 3.2.

3.12.10.2 Add to the end of subsection 3.12.10.2 the following:

When professional certification of materials, systems or equipment is required by the Contract Documents, the Owner shall be entitled to rely upon such certifications, and neither the Owner nor the Architect shall be expected to make an independent examination with respect to the performance of such materials, systems or equipment.

3.13 Add to the end of the section as follows:

The right of possession of the premises and the improvements made thereon by the Contractor shall remain at all times with the Owner. The Contractor's right to entry and use thereof arises solely from the permission granted by the Owner under the Contract Documents. The Owner shall not be liable to the Contractor, the Subcontractors, their employees, or anyone else with respect to the conditions of the premises, except only for a condition caused directly and solely by the negligence of the Owner.

3.15.1 Add “site” to the end of the second sentence.

3.15.2 Add to the end of the sentence as follows:

, and may deduct all costs thereof from any payment due the Contractor.

3.16 Insert “, Owner’s representatives” after “provide the Owner”.

3.18.1 Delete the first sentence and replace as follows:

To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect’s consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys’ fees, arising out of or resulting from performance of the Work, including claims, damage, loss or expense attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, including the Work, caused in whole or in part by the negligent or wrongful acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations, including those of indemnity, which would otherwise exist as to a party or person described in this section.

ARTICLE 4 ARCHITECT

4.1.2 In the first sentence delete “, Contractor” after “consent of the Owner”.

In the second sentence insert “of the Owner” after “Consent”.

4.1.3 Delete sub-section 4.1.3.

4.2.3 In the first sentence delete “reasonably” after “will keep the Owner”.

4.2.4 Delete the second sentence.

4.2.10 Delete sub-section 4.2.10.

4.2.11 Add to the end of the sub-section as follows:

The parties agree that the Architect's duties under this subparagraph shall be governed by Chapter 30, Section 39P of the General Laws of the Commonwealth of Massachusetts, as amended.

4.2.12 Delete the second sentence.

ARTICLE 5 SUBCONTRACTORS

5.2.1 Delete the last sentence.

5.2.2 In the second sentence insert "and legally permissible" after "has made reasonable".

5.2.3 Delete the last two sentences and replace as follows:

No increase in the Contract Sum or Contract Time shall be allowed for such change.

5.2.4 Add to the end of the sub-section as follows:

The applicable provisions of Chapter 149, Section 44F of the General Laws of the Commonwealth of Massachusetts shall apply to filed sub-bid subcontractors.

5.4.1 In sub-heading .1 delete "Section 14.2" and replace with "Article 14".

Add new sub-heading .3 as follows:

.3 The Owner may further assign the subcontract to a successor contractor or other entity.

Delete last sentence of sub-section.

5.4.2 Delete sub-sections 5.4.2 and 5.4.3.

-5.4.3

ARTICLE 6 CONSTRUCTION BY OWNER OR SEPARATE CONTRACTORS

6.1.1 At the end of the second sentence delete “including those provisions of the Conditions under the Contract related to insurance and waiver of subrogation”.

6.1.4 Delete sub-section 6.1.4 and replace as follows:

§ 6.1.4 The Owner reserves the right to enter any part of the Project site at any time to inspect the Work or to perform other work with its own forces or separate contractors, or to address any emergency situation. Such access is not to be construed to mean partial occupancy by the Owner and no claim for increase in the Contract Time or Sum will be considered unless such Owner’s contractors have delayed or damaged the Contractor’s Work. The Contractor shall permit the Owner to place and install as much furniture, equipment and other material during the progress of the Work as is possible before completion of the various parts of the Work and agrees that such placing and installation of equipment shall not in any way evidence the completion or acceptance of the Work or any portion of it.

6.2.2 Delete the last sentence.

6.2.3 Delete the last sentence.

6.2.5 Delete sub-section 6.2.5.

ARTICLE 7 CHANGES IN THE WORK

7.2.3 Add new sub-section 7.2.3 as follows:

§ 7.2.3 Upon request of the Owner or the Architect, the Contractor shall without cost to the Owner submit to the Architect, in such form as the Architect may require, an accurate written estimate of the cost of any proposed extra Work or change. The estimate shall indicate the quantity and unit cost of each item of material, and the number of hours of work and hourly rate for each class of labor, as well as a description and the amounts of all other costs chargeable under the terms of this Article. Unit labor costs for the installation of each item of material shall be shown if required by the Architect. The Contractor shall promptly revise and resubmit each estimate if the Architect determines that it is not in compliance with the requirements of this Article, or that it contains errors of fact or mathematical errors. If required by the Architect, in order to establish the exact cost of new Work added or of previously required Work omitted, the Contractor shall obtain and furnish to the Architect bona fide proposals from recognized suppliers for furnishing any material included in such Work. Such estimates shall be furnished promptly so as

to occasion no delay in the Work, and shall be furnished at the Contractor's expense. The Contractor shall state in the estimate any extension of time required for the completion of the Work if the change or extra work is ordered.

7.3.3 Delete the first sentence of the sub-section and replace as follows:

If the Construction Change Directive provides for an adjustment to the Contract Sum, and if the Contract Documents include a unit price for the work that is the subject of such directive, such unit price shall be the basis of the adjustment to the Contract Sum, unless the Owner, in its sole discretion, chooses another method. If, however, the Contract Documents do not include a unit price for such work, the adjustment shall be based on one of the following methods, as selected by the Owner:

In sub-heading .2 delete “stated in the Contract Documents or” after “Unit prices”.

7.3.4 Delete first sentence and replace as follows:

If the proposed method of adjustment in the Contract Sum is based on unit prices that are stated in the Contract Documents, such unit prices shall be the basis of any adjustment to the Contract Sum, unless the Owner has chosen another method pursuant to subparagraph 7.3.3. If the proposed method of adjustment is not based on such unit prices and the Contractor objects to the proposed method of adjustment, the Contractor must notify the Architect of such objection in writing within five (5) calendar days from Contractor's receipt of the Construction Change Directive. Failure to so object will irrevocably waive any such objections and claims on account of such method of adjustment, and the Construction Change Directive shall be deemed and shall constitute a Change Order. If the Contractor does so object, the adjustment to the Contract Sum shall be determined by the Architect on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, a reasonable allowance for overhead and profit.

In sub-heading .4 insert “and” after “and insurance,” and delete “, and sales, use or similar taxes related to the Work” after “permit fees”.

Delete sub-heading .5 and replaces as follows:

.5 A reasonable allowance for overhead and profit.

7.3.6 In the first sentence add after “the Work involved and” as follows:

, within five (5) calendar days from receipt of the Construction Change Directive,”

Insert “by written notice” after “advise the Architect”.

Add to the end of the sub-section as follows:

Failure to so advise the Architect within such 5-day period (1) shall be interpreted as Contractor’s agreement with the proposed method of adjustment; (2) shall constitute an irrevocable waiver of any right of the Contractor to submit a claim on account of the method of adjustment; and (3) shall cause the Construction Change Directive to be deemed and constitute a Change Order.

7.3.7 In the second sentence delete “recorded as” after “immediately shall be” and replace with “deemed and shall constitute”.

7.3.9 Delete the end of the first sentence starting after “Directive to the Owner,” and replace as follows:

amounts for such changes in the Work shall not be included in Applications for Payment. Such amounts shall only be included in an Application for Payment after the adjustment for the Construction Change Directive has been included in a Change Order signed by the Owner and the Contractor.

ARTICLE 8 TIME

8.2.2 In the first sentence delete “, except by agreement or instruction of the Owner”

8.2.4 Add new sub-sections 8.2.4 and 8.2.5 as follows:

-8.2.5

§ 8.2.4 Unless specifically required by law, no payment under this Contract shall be due until the construction schedule, required by Section 3.10, and conforming to the requirements of the General Requirements has been accepted by the Architect.

§ 8.2.5 If the Architect in reviewing any Application for Payment determines that the amount of completed Work in place as certified by the Architect is less than 90% of the Work in place required by the Contractor’s construction schedule or schedule of values provided for in Section 9.2, or that there have been delays to critical paths and the Contract completion date will not be met, or that, in the Owner’s sole discretion, there is reasonable concern that the Work will not be

Substantially Complete by the date required in the Contract Documents, the Contractor shall be required to submit a recovery schedule with a written description of the steps the Contractor intends to take to put the Project back on schedule. At the Owner's option, the Contractor shall take some or all of the following actions at no additional cost to the Owner:

- .1 Increase the number of workers on the site, in such quantities and trades as will substantially eliminate the backlog of work;
- .2 Increase the number of working hours per shift, shifts per day, working days per week, amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate backlog of work; or
- .3 Reschedule activities so that the completion dates initially scheduled will be met.

8.3.1 Insert "(except weather)" after "casualties" and delete "adverse weather conditions documented in accordance with Section 15.1.6.2"

Delete "pending mediation and binding dispute resolution" after "delay authorized by Owner".

Add to the end of the sub-section as follows:

, and this shall be the Contractor's sole remedy for such delay. Under no circumstances will the Contractor be entitled to an increase in the Contract Sum, or to any other damages, on account of or in connection with any delay, regardless of the cause of such delay, and Contractor agrees not to make any claim for such damages, including, but not limited, claims for damages on account of having to perform out-of-sequence work, claims for damages on account of loss of production, and claims for damages on account of hindrances or interference with the work.

8.3.3 Delete sub-section 8.3.3.

8.3.4 Add new sections 8.3.4 and 8.3.5 as follows:

-8.3.5

§ 8.3.4 No extension of time shall be granted because of seasonal or abnormal variations in temperature, humidity or precipitation, which conditions shall be wholly at the risk of the Contractor, whether occurring within the time originally scheduled for completion or within the period of any extension granted. There shall be no increase in the Contract Sum on account of any additional costs of operations or conditions resulting therefrom.

§ 8.3.5 The Contractor hereby agrees that the Contractor shall have no claim for damages of any kind against the Owner or the Architect on

account of any delay in the commencement of the Work and/or any hindrance, delay or suspension of any portion of the Work, whether such delay is caused by the Owner, the Architect, or otherwise, except as and to the extent expressly provided in G.L. c. 30, §39N. The Contractor acknowledges that the Contractor's sole remedy for any such delay and/or suspension will be an extension of time as provided in this Article.

8.4 Add new section 8.4 as follows:

§ 8.4 LIQUIDATED DAMAGES

§ 8.4.1 It is expressly understood and agreed, by and between the Contractor and Owner, that the time for the completion of the Work described herein is a reasonable time for the completion of same, taking into consideration the average climatic range and usual industrial and/or residential conditions prevailing in this locality. If the said Contractor shall neglect, fail or refuse to complete the Work within the times herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to the Owner \$_____[SEM1], not as a penalty but as liquidated damages for such breach of contract, for each and every calendar day that the Contractor shall be in default after the time stipulated for completing the Work. The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be deducted by the Owner from periodic payments.

ARTICLE 9 SCHEDULE OF VALUES

9.1.2 Delete subsection 9.1.2 and replace with the following:

§9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that, in the opinion of the Architect, application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner, the applicable unit prices shall be equitably adjusted.

9.2 Add to the end of the section as follows:

, and shall be revised if later found by the Architect to be inaccurate. In addition, the Contractor shall submit to the Architect, at least 14 days before the first Application for Payment, a Cash Flow Schedule that shows the percentage completion to be obtained and the total dollar value of Work to be completed as of the first of each month until Substantial Completion. All calculations in the Cash Flow Schedule shall be on the basis of Work in place and shall exclude the value of materials delivered but not in place.

9.2.1 Add new sub-section 9.2.1 as follows:

§ 9.2.1 The Cash Flow Schedule shall be based on an orderly progression of the Work allowing adequate time for each operation (including adequate time for submission and review of submittals) and leading to a reasonable certainty of Substantial Completion by the date established in the Agreement. The Cash Flow Schedule will be reviewed by the Architect for compliance with the requirements of the Contract Documents. Unless specifically required by law, no payment under this Contract shall be due until the Cash Flow Schedule has been reviewed and approved by the Architect. The Architect's review of the Cash Flow Schedule shall not impose any duty on the Architect or the Owner with respect to the timing, planning, scheduling or execution of the Work. In particular if the Contractor proposes a Cash Flow Schedule indicating a date of Substantial Completion which is earlier than the Contract Time the Contractor shall not be entitled to additional payment or compensation of any kind if for any reason the full Contract Time is required to achieve Substantial Completion of the Work.

9.3.1.1 Delete sub-section 9.3.1.1.

9.3.2 Add to the end of the sub-section as follows:

The Owner may deduct the amount of such costs from payments due the Contractor.

9.4.1 Insert at the beginning of the first sentence as follows:

Subject to the Contractor's compliance with Section 9.3 and the provisions of Section 9.6,

9.5.1 Add new sub-headings .8, .9, .10, .11, and .12 as follows:

- .8 failure of the Contractor or mechanical or electrical trade subcontractors to comply with requirements of the General Requirements for maintaining record drawings. The Contractor shall check record drawings each month. Written confirmation that the record drawings are current will be required by the Architect before approval of the Contractor's monthly payment requisition;
- .9 failure of the Contractor to provide required warranties under Section 9.3, claims for direct payment, or reasonable evidence indicating probable filing of such claims;
- .10 costs incurred by the Owner under Section 10.2.5;
- .11 failure of the Contractor to submit prerequisite documentation required by the General Requirements; or
- .12 liquidated damages due the Owner pursuant to Section 8.4.

9.5.2 Delete "Claim" and replace with "claim".

9.5.3 Delete sub-section 9.5.3.

9.6.4 Delete "If the Contractor fails to furnish such evidence within seven days," from the beginning of the second sentence.

9.6.5 Delete sub-section 9.6.5.

9.6.7 Delete sub-section 9.6.7.

9.6.9 Add new sub-section 9.6.9 as follows:

§ 9.6.8 Notwithstanding the provisions of Section 9.6 all progress payments shall be made in accordance with Chapter 30, Sections 39F, 39G and 39K (as appropriate) of the General Laws of the Commonwealth of Massachusetts, as amended.

9.7 Delete section 9.7.

9.8.1 Add to the end of the sub-section as follows:

In addition, Substantial Completion for the entire Project shall be achieved only when: (1) the Owner has beneficial occupancy and use of the entire Project for all its intended uses; (2) all Project systems included in the Work are operational and acceptable to the Owner; (3) all governmental inspections for the Project have been successfully completed, all governmental approvals and related paperwork have been delivered to the Owner, and final and unconditional certificates of occupancy for the entire Project have been delivered to the Owner, (4) the only remaining Work to be performed is minor in nature and the remaining Work may reasonably be performed without having a material adverse effect on or materially

interfering with the Owner's occupancy and use of the Project and (5) all prerequisites to Substantial Completion defined in the Contract Documents have been completed.

9.8.2 Add to the end of the first sentence as follows:

together with the estimated value of completing or correcting such items (the "Punchlist") and (2) the permits and certificates referenced in Section 13.5. The Architect shall have the right to modify and supplement the Punchlist, including the estimated value of completion or correction.

9.8.5 Delete sub-section 9.8.5 and replace as follows:

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor by the Architect. The certificate shall state the date of substantial completion, shall state any consequent responsibilities of the Contractor and the Owner in accordance with the Contract Documents. The Contractor shall complete and correct any incomplete and defective work within forty-five (45) calendar days from the date of Substantial Completion

9.8.6 Add new sub-section 9.8.6 as follows:

§ 9.8.6 Services provided by the Architect to conduct more than three (3) inspections of completed Work and any inspections beyond sixty (60) days after the date of substantial completion of any portion of the Work as stated in the Agreement shall be paid by the Contractor to the Owner. The Owner may deduct the cost of such services and inspections from payments due the Contractor.

9.9.1 Delete the end of the first sentence starting after "Work at any stage".

Delete the second sentence and replace as follows:

Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner has accepted in writing the responsibilities assigned to it and the Contractor for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance.

Delete the second to last sentence.

9.10.1 Add to the end of the sub-section as follows:

By Final Completion, the Contractor shall have completed its performance of all Punchlist items, completed all balancing of mechanical and other applicable systems and all seasonal system adjustments that are reasonably necessary to proper functioning of the completed Project, delivered to the Owner all operations and maintenance manuals and completed related training for such manuals, and delivered to the Owner all required warranties and guarantees.

9.10.3 Delete sub-sections 9.10.3 and 9.10.4.
-9.10.4

9.10.5 Insert “for payment for Work performed and of all other claims of which the payee knew or should have known at the time of final payment,” after “claims by that payee”

9.10.6 Add new sub-section 9.10.6 as follows:

§ 9.10.6 Notwithstanding anything in the Contract Documents to the contrary, final payment shall be made in accordance with the requirements of G.L.c.30, §39K (building projects) or §39G (public works projects), as amended.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

10.2.1 Add new sub-heading .4 as follows:

.4 work or property of the Owner, its tenants, or other parties at or near the Project site with the Owner's permission.

10.2.5 At the beginning and end of the first sentence:

Delete “and” after “10.2.1.2”.

Insert “and 10.2.1.4” after “10.2.1.3”.

Delete the second sentence in its entirety.

10.2.9 Add new sub-sections 10.2.9, 10.2.10, 10.2.11, 10.2.12, and 10.2.13 as follows:
-10.2.13

§ 10.2.9 The Contractor shall provide and maintain in good operating condition suitable and adequate fire protection equipment and services, and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the fire insurance company carrying insurance on the Work or by the local fire chief or fire marshal. The area within the site limits shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site.

§ 10.2.10 The Contractor shall at all times protect excavations, trenches, buildings and materials from rain water, groundwater, backup or leakage of sewers, drains and other piping, and from water of any other origin and shall remove promptly any accumulation of water. The Contractor shall provide and operate all pumps, piping and other equipment necessary to this end.

§ 10.2.11 The Contractor shall remove snow and ice which might result in damage or delay.

§ 10.2.12 During the progress of the Work and at all times prior to the date of Substantial Completion or occupancy of the Work by the Owner, whichever is earlier, the Contractor shall provide temporary heat, ventilation, and enclosure, adequate to permit the Work to proceed in a timely fashion, and to prevent damage to completed Work or Work in progress, or to materials stored on the premises. The use of the permanent heating and/or ventilation systems for temporary heat and/or ventilation shall be subject to the prior written approval of the Owner and Architect.

§ 10.2.13 [G.L. c.149, §44F(1)] The Contractor shall install weather protection and furnish adequate heat in the protected area from November 1 to March 31.

10.3.1 Delete the second sentence and replace as follows:

The Contractor shall not cause or permit any introduction onto, under, or near the Owner's property of any hazardous materials or substances as defined by any applicable law, and shall not cause or permit any release, discharge, transportation, storage, or disposal of such materials or substances onto, under, or near the Owner's property or areas near the Owner's property. If the Contractor encounters or recognizes on the site any material known or reasonably believed to be hazardous, including but not limited to asbestos or polychlorinated biphenyl (PCB), the Contractor shall immediately stop Work in the area affected and report the condition to the Owner and Architect in writing. The Contractor and the Owner shall cooperate in implementing measures to remove or contain said material and the Contractor shall comply with all directions of the Architect in the implementation of such removal or containment.

10.3.2 Delete sub-sections 10.3.2, 10.3.3, and 10.3.4.

10.3.5 Delete the remainder of the sentence starting after "obligations under" and replace as follows:

Article 10 or for any violation of applicable law related to the Contractor's noncompliance with the provisions of this Article 10.

10.3.6 Delete sub-section 10.3.6.

10.3.7 Add new sub-section 10.3.7 as follows:

§ 10.3.7 The parties anticipate that certain hazardous substances and/or materials may be discovered at the site. When such conditions are set forth in the Contract Documents, the Contractor acknowledges that such conditions have been considered in establishing the Contract Time and Contract Sum. No extension of the Contract Time or increase in the Contract Sum shall be claimed or allowed with respect to any hazardous substances or materials located at the site which were disclosed in the Contract Documents. The Contractor shall strictly comply with all laws, regulations, rules, orders, ordinances and the like related to the excavation, storage, removal and disposal of any such hazardous substances or materials.

ARTICLE 11 INSURANCE AND BONDS

11.1.1 In the last sentence insert “the Owner’s Project Manager,” after “The Owner,”.

Add the following new paragraphs to the end of Section 11.1.1:

The insurance required by this Agreement shall include all major divisions of coverage, and shall be on a comprehensive general basis including Premises and Operations (including X-C-U), Owner's and Contractor's Protective, Products and Completed Operations, and Owned, Non-owned, and Hired Motor Vehicles. Such insurance shall be written for not less than any limits of liability required by law or those set forth in the Contract Documents, whichever is greater.

All insurance shall be written on an occurrence basis, unless the Owner approves in writing coverage on a claims-made basis. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and any further period during which coverage is required to be maintained after final payment by the Contract Documents. The Owner shall be named an Additional Insured on all policies.

Coverage for such liability insurance shall be provided by a company or companies reasonably acceptable to the Owner and authorized to do business in Massachusetts. Contractor shall furnish to Owner written confirmation as to the insurance carrier's most current financial ratings prior to commencing work.

11.1.2 Delete subsection 11.1.2 and replace with the following:

§11.1.2 Contractor shall provide Performance and Payment Bonds, each in the amount of 100% of the Contract Price, and each by a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and acceptable to the Owner. The attorney-in-fact who signs the bonds on behalf of the surety, must affix to each bond a certified and current copy of the power of attorney. The Performance and Payment Bonds shall be written in a form satisfactory to the Owner.

11.1.5 Add new sub-section 11.1.5:

§ 11.1.5 In no case shall the limits of liability be less than the following:

Contractor's Commercial General Liability

Bodily Injury &	\$500,000.00 each occurrence
Property Damage	\$1,000,000.00 general aggregate, per project

This policy shall include coverage relating to explosion, collapse, and underground property damage if blasting operations constitute part of the Work to be performed under this Contract.

Vehicle Liability

The Contractor shall provide the following minimum coverage with respect to the operations of any employee, including coverage for owned, non-owned, and hired vehicles:

Combined Single Limit: \$1,000,000.00

Worker's Compensation

The Contractor shall provide the following coverage in accordance with M.G.L. c. 149, sec. 34A and M.G.L. c. 152 as amended, unless a higher coverage is specified below:

Part One	Provide Statutory Minimum
Employer's Liability	\$500,000.00 each accident
Part Two	\$500,000.00 disease per employee
	\$500,000.00 disease policy aggregate

11.1.3.1 The Contractor shall be responsible for having acceptable insurance coverage provided by or on behalf of all Subcontractors, with such insurance to be similar to that required of the Contractor under the Agreement and these General Conditions. The Contractor shall not allow any Subcontractor to commence Work on the Project prior to the Contractor's receipt of certificates of insurance that are acceptable in form and limits to the Owner; the Owner shall have no obligation to pay the

Contractor for any Work performed by a Subcontractor who has not supplied acceptable insurance certificates prior to starting its Work. The Owner shall be named an additional insured on all such certificates.

11.1.3.2 All insurance policies shall contain provisions or endorsements necessary to assure coverage of claims by one insured against another. All required insurance policies are to be endorsed to state that the Contractor's policies shall be primary to all other insurance available to the Owner and other specified additional insureds for liability arising out of or resulting from the Contractor's operations under the Contract, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

11.2 Delete section 11.2 and replace as follows:

§ 11.2 OWNER'S LIABILITY INSURANCE

The Contractor shall procure and pay for an Owner's policy of Owner's protective liability insurance insuring the Owner and its officers, employees and agents against claims which may arise from operations under the Contract or relating thereto.

11.2.1 Delete sub-section 11.2.1 and replace as follows:

§ 11.2.1 The Contractor shall purchase and maintain property insurance upon the entire Work at the site to the full insurable value thereof. Coverage for such liability insurance shall be provided by a company or companies reasonably acceptable to the Owner. Contractor shall furnish to Owner written confirmation as to the insurance carrier's most current financial ratings prior to commencing work. Such insurance shall include the interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the work and shall insure against the perils of fire and extended coverage and shall include "all risks" insurance for physical loss or damage including without duplication, theft, vandalism and malicious mischief. This insurance shall also cover portions of the Work stored off the site or in transit. If this insurance is written with stipulated amounts deductible, the Owner shall not be responsible for any difference between the payments made by the insurance carrier and the claim. The policy shall contain a provision that coverages afforded under policies will not be canceled or allowed to expire until at least 30 days' written notice has been given to the Owner. The Owner shall be named insured within the policy.

11.2.3 Delete sub-section 11.2.3.

11.3 - Delete Sections 11.3 and 11.4 in their entirety.

11.4

11.5.1 Delete the first sentence.

11.5.2 Delete sub-section 11.5.2

11.6.11 Add new sub-section 11.6.1 as follows:

§ 11.6.11 The Owner shall have the power to adjust and settle with its insurers any loss for which it has obtained insurance.

Upon the occurrence of an insured loss, the Owner and the Contractor shall cooperate with each other and with each other's insurer in the submission of claims and related information and the distribution of any insurance proceeds. If after such a loss no other special agreement is made, replacement of damaged work shall be covered by an appropriate change order.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

12.2.1 Add to the end of the sub-section as follows:

The Contractor shall bear the cost of any loss or damages to the Owner resulting from such failure or defect.

12.2.2.1 Delete the third sentence.

Add to the end of the sub-section as follows:

If the correction or repair of any of the Work is required to avoid impacts to the maintenance, operation or safety of any portion of the Project site or the Owner's property, the Owner reserves the right to undertake the repairs prior to notifying the Contractor or without waiting for the Contractor to respond, without waiving the Owner's rights under the warranties and the Owner's right to correct work under Section 2.4.

ARTICLE 13 MISCELLANEOUS PROVISIONS

13.1 Delete the the words "by the law of", and insert the words "Commonwealth of Massachusetts" at the end of the sentence as revised.

Delete the second sentence.

13.2.1 In the second sentence delete "Except as provided in Section 13.2.2".

13.2.2 Delete sub-section 13.2.2.

13.4.4 Delete sub-section 13.5.4 and replace as follows:

§ 13.5.4 The Contractor shall obtain and deliver promptly to the Architect any occupancy permit and any certificates of final inspection of any part of the Contractor's work and operating permits for any mechanical apparatus, such as elevators, escalators, boilers, air compressors, etc., which may be required by law to permit full use and occupancy of the premises by the Owner. Receipt of such permits or certificates by the Architect shall be a condition precedent to Substantial Completion of the Work.

13.7.1 Add new sub-section 13.7.1 as follows:

§ 13.7.1 It is expressly agreed that the obligations of the Contractor hereunder arise out of contractual duties, and that the failure of the Contractor to comply with the requirements of the Contract Documents shall constitute a breach of contract, not a tort, for the purpose of applicable statutes of limitation and repose. Any cause of action which the Owner may have on account of such failure shall be deemed to accrue only when the Owner has obtained actual knowledge of such failure, not before.

13.8 Add new section 13.8 as follows:

§ 13.8 LIMITATION OF LIABILITY

§ 13.8.1 The Owner shall be liable, if ever, only to the extent of its interest in the Project; and no officer, director, partner, agent or employee of the Owner shall ever be personally or individually liable with respect to this Contract or the Work. Each Subcontract shall include the foregoing limitation, which shall be effective if the Owner ever succeeds to the Contractor's rights and obligations under a Subcontract.

13.9 Add new section 13.9 as follows:

§ 13.9 DEFENSE OF SUITS

§ 13.9.1 The Contractor shall be responsible for, shall defend and pay all costs, attorneys' fees and liabilities both direct and indirect as a result of suits arising out of this Contract.

§ 13.9.2 Neither final acceptance nor occupation of the premises by the Owner shall relieve the Contractor of responsibility for all claims for labor, materials, and equipment arising out of this Contract.

§ 13.9.3 The Contractor shall indemnify and hold harmless the Owner and the Architect and their agents and employees from and against all claims, damages, losses, and expenses including attorneys' fees arising out of or resulting from the performance of the work.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

14.1.1 Insert in the beginning of the first sentence as follows:

Provided that the Contractor is not in breach of any of its obligations under the Contract,

Delete sub-headings .1, .2, and .4.

14.1.2 Delete sub-section 14.1.2.

14.1.3 Delete sub-section 14.1.3 and replace as follows:

§ 14.1.3 If one of the above reasons exists, the Contractor may, upon seven days written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work properly executed and for all materials or equipment not incorporated in the Work, but delivered and suitably stored at the site. The payment for materials or equipment stored at the site shall be conditioned upon submission by the Contractor of bills of sale or such other evidence as is satisfactory to the Owner to establish the Owner's title to such material or equipment or otherwise protect the Owner's interest.

14.1.4 Delete sub-section 14.1.4.

14.2.1 Delete “repeatedly” from the beginning of sub-headings .1 and .3.

Insert new sub-headings .4 and .5 after sub-heading .3 as follows:

.4 becomes the subject of a voluntary petition in bankruptcy or any voluntary proceeding related to insolvency, receivership, liquidation or comparable proceeding or any assignment for the benefit of creditors or becomes the subject of an involuntary petition in bankruptcy or any involuntary proceeding related to insolvency, receivership, liquidation or comparable proceeding or any assignment for the benefit of creditors.

.5 submits three successive Applications for Payment, each of which indicate that the actual Work completed is less than 90 percent of the values estimated in the construction schedule (submitted by the Contractor pursuant to Section 3.10.1) to be completed by the respective dates.

14.2.2 In the first sentence delete “, and upon certification by the Architect that sufficient cause exists to justify such action,”.

Delete the second sentence of sub-heading .3.

14.2.4 In the first sentence:

Insert “all costs and losses incurred by the Owner on account of the Contractor’s failure to comply with the Contract Documents and” after “the Work, including”.

Insert “and Owner’s Project Manager’s” after “for the Architect’s”.

Delete the last sentence of the sub-section and replace as follows:

The Owner shall be entitled to hold all amounts due the Contractor at the date of termination until all of the Owner’s damages have been established, and to apply such amounts to such damages.

14.3.2 Insert “, subject to compliance with the conditions of Section 8.3.” at the end of the first sentence.

Delete the second sentence.

14.4.2 In sub-heading .3 delete “and” after “all existing contracts” and replace with “except for subcontracts, if any, that Owner elects to assume, terminate all”

14.4.3 Delete sub-section 14.4.3 and replace as follows:

§ 14.4.3 In the event that the Contract is terminated for the Owner’s convenience, the Contractor shall be reimbursed in accordance with the Contract Documents for all Work properly performed up to the termination date, and for all materials or equipment not incorporated in the Work, but delivered and suitably stored at the site. Payment for materials or equipment stored at the site shall be conditioned upon submission by the Contractor of bills of sale or such other evidence as is satisfactory to the Owner to establish the Owner’s title to such material or equipment or otherwise protect the Owner’s interest. The Contractor shall not be entitled to payment for overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

15.1.1 Delete sub-section 15.1.1 and replace as follows:

§ 15.1.1 DEFINITION

The word “Claim” shall mean a written demand by the Contractor for an increase in the Contract Time or the Contract Sum. The Contractor is responsible for substantiating its Claims. The word “Claim” shall not include claims by the Owner. The Owner may withhold from the Contractor the value of any claims against the Contractor in accordance with Massachusetts General Laws, including, but not limited to, Sections 39G and 39K of Chapter 30.

15.1.2 Delete subsection 15.1.2

15.1.3 Delete sub-section 15.1.3 and replace as follows:

§ 15.1.3 NOTICE OF CLAIMS

Contractor must initiate Claims within fourteen (14) calendar days after occurrence of the event giving rise to such Claim by written notice to the Architect and the Owner. Such written notice must (1) be signed by the Contractor; (2) conspicuously identify on its face that the notice serves as a notice of claim; (3) explain in sufficient detail the basis of the Claim; (4) identify the date of the event giving rise to such Claim; and (5) state the exact dollar amount of the increase in the Contract Sum being requested, if any, and the number of days extension to the Contract Time sought, if any.

15.1.3.2 Delete subsection 15.1.3.2

15.1.4 Delete “Section 9.7 and” after “as provided in”.

15.1.4.2 Delete subsection 15.1.4.2

15.1.6.1 In the second sentence delete “of cost and” after “include an estimate”.

15.1.6.2 Delete sub-section 15.1.5.2.

15.1.7 Delete sub-section 15.1.7.

15.2.1 Delete the capitalized word, “Claim,” and replace with lower-case word, “claim,” in the first and fourth sentences.

In the third sentence:

Delete “mediation” after “condition precedent to” and replace with “litigation”.

15.2.2 Delete sub-section 15.2.2 and replace as follows:

§ 15.2.2 The Initial Decision Maker will review Claims and within 30 days of the receipt of the Claim take one or more of the following actions: (1) request additional supporting data from the Contractor; (2) notify the Contractor that the Initial Decision Maker requires additional time to resolve the Claim; and/or (3) reject the Claim in whole or in part.

15.2.3 Delete the last sentence.

15.2.4 Delete sub-section 15.2.4 and replace as follows:

§ 15.2.4 If the Architect requests the Contractor to furnish additional supporting data in connection with a Claim, the Contractor shall provide such data within ten (10) calendar days of such request. If the Contractor is of the opinion that it is impossible to provide such data within such time, the Contractor shall notify the Architect of such opinion in writing within such ten-day period. If the Architect determines that it is impossible for such data to be provided within such ten-day period through no fault of the Contractor, the Contractor shall provide such data within 30 calendar days of the Architect's request, unless the Architect fixes another date, in which case the data must be submitted by the date so fixed. Failure of the Contractor to provide such data within the time prescribed herein shall result in the irrevocable waiver of the Claim.

15.2.5 Delete the last sentence and replace as follows:

The rejection of a claim by the Architect and any decisions of the Owner with respect to the same, and the interpretations by the Architect of the plans, drawings and specifications, shall be final and binding on the Contractor in accordance with Section 39J of Chapter 30 of the Massachusetts General Laws.

15.2.6 Delete sub-section 15.2.6 in its entirety.

15.2.7 Delete the capitalized word, "Claim," and replace with lower-case word, "claim," in the first and second sentences.

15.2.8 Delete sub-section 15.2.8.

15.3 Delete sections 15.3 and 15.4 in their entirety.
-15.4

EXHIBIT A to Document A101 – 2017 is hereby deleted in its entirety and replaced with the Insurance Requirements set forth in the General Conditions and Supplementary Conditions.

END OF SECTION

SECTION 008300

WAGE RATES

PART 1 – GENERAL

1.01 WAGE RATES

- A. Minimum wage rates shall be in accordance with the Commonwealth of Massachusetts Departments of Labor and Industries latest wage rates, as determined by the Commissioner under the provisions of the Massachusetts General Laws, Chapter 149, Section 26 to 27D inclusive, and the U.S. Department of Labor Prevailing Wage Determination. Wages paid shall equal or exceed the higher rate.
- B. Copies of the wage rates schedules are bound herein; however, it shall be the Bidder's responsibility to ensure that he has the latest issue. If not, Bidder shall obtain a copy of the latest issues for the wage rates indicated above and fully comply with all requirements.



CHARLES D. BAKER
Governor

KARYN E. POLITO
Lt. Governor

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

Prevailing Wage Rates

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

ROSALIN ACOSTA
Secretary
MICHAEL FLANAGAN
Director

Awarding Authority: Lowell Regional Transit Authority

Contract Number:

City/Town: LOWELL

Description of Work: Replacement of leaking roofs at the Gallagher Intermodal Transit Center. Address 115 Thorndike Street, Lowell MA 01852

Job Location: 115 Thorndike Street

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Construction						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2021	\$35.95	\$13.41	\$14.82	\$0.00	\$64.18
	12/01/2021	\$35.95	\$13.41	\$16.01	\$0.00	\$65.37
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2021	\$36.02	\$13.41	\$14.82	\$0.00	\$64.25
	12/01/2021	\$36.02	\$13.41	\$16.01	\$0.00	\$65.44
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2021	\$36.14	\$13.41	\$14.82	\$0.00	\$64.37
	12/01/2021	\$36.14	\$13.41	\$16.01	\$0.00	\$65.56
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 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>	06/01/2021	\$35.75	\$8.60	\$16.64	\$0.00	\$60.99
	12/01/2021	\$36.66	\$8.60	\$16.64	\$0.00	\$61.90
	06/01/2022	\$37.56	\$8.60	\$16.64	\$0.00	\$62.80
	12/01/2022	\$38.41	\$8.60	\$16.64	\$0.00	\$63.65
	06/01/2023	\$39.31	\$8.60	\$16.64	\$0.00	\$64.55
	12/01/2023	\$40.21	\$8.60	\$16.64	\$0.00	\$65.45
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	06/01/2021	\$35.75	\$8.60	\$16.64	\$0.00	\$60.99
	12/01/2021	\$36.66	\$8.60	\$16.64	\$0.00	\$61.90
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	12/01/2020	\$38.10	\$12.80	\$9.45	\$0.00	\$60.35
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
	06/01/2022	\$37.06	\$8.60	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.91	\$8.60	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.81	\$8.60	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.71	\$8.60	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2021	\$50.73	\$13.75	\$15.80	\$0.00	\$80.28
	12/01/2021	\$51.88	\$13.75	\$15.80	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2021	\$50.73	\$13.75	\$15.80	\$0.00	\$80.28
	12/01/2021	\$51.88	\$13.75	\$15.80	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
	06/01/2022	\$37.06	\$8.60	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.91	\$8.60	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.81	\$8.60	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.71	\$8.60	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	06/01/2021	\$35.75	\$8.60	\$16.64	\$0.00	\$60.99
	12/01/2021	\$36.66	\$8.60	\$16.64	\$0.00	\$61.90
	06/01/2022	\$37.56	\$8.60	\$16.64	\$0.00	\$62.80
	12/01/2022	\$38.41	\$8.60	\$16.64	\$0.00	\$63.65
	06/01/2023	\$39.31	\$8.60	\$16.64	\$0.00	\$64.55
	12/01/2023	\$40.21	\$8.60	\$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>	06/01/2021	\$35.75	\$8.60	\$16.64	\$0.00	\$60.99
	12/01/2021	\$36.66	\$8.60	\$16.64	\$0.00	\$61.90
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2020	\$46.10	\$7.07	\$17.98	\$0.00	\$71.15

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2020

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

Notes:

Apprentice to Journeyworker Ratio:1:4

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (LOWELL)</i>	08/01/2021	\$55.01	\$11.39	\$21.57	\$0.00	\$87.97
	02/01/2022	\$55.59	\$11.39	\$21.57	\$0.00	\$88.55

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Lowell

Effective Date - 08/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.51	\$11.39	\$21.57	\$0.00	\$60.47
2	60	\$33.01	\$11.39	\$21.57	\$0.00	\$65.97
3	70	\$38.51	\$11.39	\$21.57	\$0.00	\$71.47
4	80	\$44.01	\$11.39	\$21.57	\$0.00	\$76.97
5	90	\$49.51	\$11.39	\$21.57	\$0.00	\$82.47

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.80	\$11.39	\$21.57	\$0.00	\$60.76
2	60	\$33.35	\$11.39	\$21.57	\$0.00	\$66.31
3	70	\$38.91	\$11.39	\$21.57	\$0.00	\$71.87
4	80	\$44.47	\$11.39	\$21.57	\$0.00	\$77.43
5	90	\$50.03	\$11.39	\$21.57	\$0.00	\$82.99

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER	06/01/2021	\$50.19	\$13.75	\$15.80	\$0.00	\$79.74
OPERATING ENGINEERS LOCAL 4	12/01/2021	\$51.33	\$13.75	\$15.80	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
CAISSON & UNDERPINNING BOTTOM MAN	06/01/2021	\$41.82	\$8.60	\$17.72	\$0.00	\$68.14
LABORERS - FOUNDATION AND MARINE	12/01/2021	\$42.83	\$8.60	\$17.72	\$0.00	\$69.15
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING LABORER	06/01/2021	\$40.67	\$8.60	\$17.72	\$0.00	\$66.99
LABORERS - FOUNDATION AND MARINE	12/01/2021	\$41.68	\$8.60	\$17.72	\$0.00	\$68.00
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN	06/01/2021	\$40.67	\$8.60	\$17.72	\$0.00	\$66.99
LABORERS - FOUNDATION AND MARINE	12/01/2021	\$41.68	\$8.60	\$17.72	\$0.00	\$68.00
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
LABORERS - ZONE 2	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
	06/01/2022	\$37.06	\$8.60	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.91	\$8.60	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.81	\$8.60	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.71	\$8.60	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
CARPENTER	03/01/2021	\$43.54	\$9.40	\$18.95	\$0.00	\$71.89
CARPENTERS -ZONE 2 (Eastern Massachusetts)	09/01/2021	\$44.19	\$9.40	\$18.95	\$0.00	\$72.54
	03/01/2022	\$44.79	\$9.40	\$18.95	\$0.00	\$73.14
	09/01/2022	\$45.44	\$9.40	\$18.95	\$0.00	\$73.79
	03/01/2023	\$46.04	\$9.40	\$18.95	\$0.00	\$74.39

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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - CARPENTER - Zone 2 Eastern MA

Effective Date - 03/01/2021

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

Effective Date - 09/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.10	\$9.40	\$1.73	\$0.00	\$33.23
2	60	\$26.51	\$9.40	\$1.73	\$0.00	\$37.64
3	70	\$30.93	\$9.40	\$13.76	\$0.00	\$54.09
4	75	\$33.14	\$9.40	\$13.76	\$0.00	\$56.30
5	80	\$35.35	\$9.40	\$15.49	\$0.00	\$60.24
6	80	\$35.35	\$9.40	\$15.49	\$0.00	\$60.24
7	90	\$39.77	\$9.40	\$17.22	\$0.00	\$66.39
8	90	\$39.77	\$9.40	\$17.22	\$0.00	\$66.39

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
Step 1&2 \$30.72/ 3&4 \$36.75/ 5&6 \$55.37/ 7&8 \$61.45

Apprentice to Journeyworker Ratio:1:5

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

All Aspects of New Wood Frame Work

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - CARPENTER (Wood Frame) - Zone 3

Effective Date - 04/01/2021

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

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

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
Step 1&2 \$17.63/ 3&4 \$19.95/ 5&6 \$27.22/ 7&8 \$29.54

Apprentice to Journeyworker Ratio:1:5

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

Effective Date - 01/01/2020

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

Notes:

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

Apprentice to Journeyworker Ratio:1:3

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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CHAIN SAW OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
	06/01/2022	\$37.06	\$8.60	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.91	\$8.60	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.81	\$8.60	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.71	\$8.60	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2021	\$51.73	\$13.75	\$15.80	\$0.00	\$81.28
	12/01/2021	\$52.88	\$13.75	\$15.80	\$0.00	\$82.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2021	\$33.40	\$13.75	\$15.80	\$0.00	\$62.95
	12/01/2021	\$34.19	\$13.75	\$15.80	\$0.00	\$63.74
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2021	\$52.06	\$8.25	\$22.75	\$0.00	\$83.06

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 01/01/2021

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

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

DEMO: ADZEMAN <i>LABORERS - ZONE 2</i>	06/01/2021	\$40.82	\$8.60	\$17.57	\$0.00	\$66.99
	12/01/2021	\$41.83	\$8.60	\$17.57	\$0.00	\$68.00
	06/01/2022	\$42.83	\$8.60	\$17.57	\$0.00	\$69.00
	12/01/2022	\$43.83	\$8.60	\$17.57	\$0.00	\$70.00
	06/01/2023	\$44.83	\$8.60	\$17.57	\$0.00	\$71.00
	12/01/2023	\$46.08	\$8.60	\$17.57	\$0.00	\$72.25
For apprentice rates see "Apprentice- LABORER"						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2021	\$41.82	\$8.60	\$17.57	\$0.00	\$67.99
	12/01/2021	\$42.83	\$8.60	\$17.57	\$0.00	\$69.00
	06/01/2022	\$43.83	\$8.60	\$17.57	\$0.00	\$70.00
	12/01/2022	\$44.83	\$8.60	\$17.57	\$0.00	\$71.00
	06/01/2023	\$45.83	\$8.60	\$17.57	\$0.00	\$72.00
	12/01/2023	\$47.08	\$8.60	\$17.57	\$0.00	\$73.25
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: BURNERS <i>LABORERS - ZONE 2</i>	06/01/2021	\$41.57	\$8.60	\$17.57	\$0.00	\$67.74
	12/01/2021	\$42.58	\$8.60	\$17.57	\$0.00	\$68.75
	06/01/2022	\$43.58	\$8.60	\$17.57	\$0.00	\$69.75
	12/01/2022	\$44.58	\$8.60	\$17.57	\$0.00	\$70.75
	06/01/2023	\$45.58	\$8.60	\$17.57	\$0.00	\$71.75
	12/01/2023	\$46.83	\$8.60	\$17.57	\$0.00	\$73.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 2</i>	06/01/2021	\$41.82	\$8.60	\$17.57	\$0.00	\$67.99
	12/01/2021	\$42.83	\$8.60	\$17.57	\$0.00	\$69.00
	06/01/2022	\$43.83	\$8.60	\$17.57	\$0.00	\$70.00
	12/01/2022	\$44.83	\$8.60	\$17.57	\$0.00	\$71.00
	06/01/2023	\$45.83	\$8.60	\$17.57	\$0.00	\$72.00
	12/01/2023	\$47.08	\$8.60	\$17.57	\$0.00	\$73.25
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2021	\$41.57	\$8.60	\$17.57	\$0.00	\$67.74
	12/01/2021	\$42.58	\$8.60	\$17.57	\$0.00	\$68.75
	06/01/2022	\$43.58	\$8.60	\$17.57	\$0.00	\$69.75
	12/01/2022	\$44.58	\$8.60	\$17.57	\$0.00	\$70.75
	06/01/2023	\$45.58	\$8.60	\$17.57	\$0.00	\$71.75
	12/01/2023	\$46.83	\$8.60	\$17.57	\$0.00	\$73.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 2</i>	06/01/2021	\$40.82	\$8.60	\$17.57	\$0.00	\$66.99
	12/01/2021	\$41.83	\$8.60	\$17.57	\$0.00	\$68.00
	06/01/2022	\$42.83	\$8.60	\$17.57	\$0.00	\$69.00
	12/01/2022	\$43.83	\$8.60	\$17.57	\$0.00	\$70.00
	06/01/2023	\$44.83	\$8.60	\$17.57	\$0.00	\$71.00
	12/01/2023	\$46.08	\$8.60	\$17.57	\$0.00	\$72.25
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2021	\$50.19	\$13.75	\$15.80	\$0.00	\$79.74
	12/01/2021	\$51.33	\$13.75	\$15.80	\$0.00	\$80.88
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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ELECTRICIAN	03/01/2021	\$55.41	\$13.00	\$20.01	\$0.00	\$88.42
ELECTRICIANS LOCAL 103	09/01/2021	\$56.84	\$13.00	\$20.06	\$0.00	\$89.90
	03/01/2022	\$58.04	\$13.00	\$20.09	\$0.00	\$91.13
	09/01/2022	\$59.48	\$13.00	\$20.13	\$0.00	\$92.61
	03/01/2023	\$60.67	\$13.00	\$20.17	\$0.00	\$93.84

Apprentice - ELECTRICIAN - Local 103

Effective Date - 03/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$22.16	\$13.00	\$0.66	\$0.00	\$35.82
2	40	\$22.16	\$13.00	\$0.66	\$0.00	\$35.82
3	45	\$24.93	\$13.00	\$15.13	\$0.00	\$53.06
4	45	\$24.93	\$13.00	\$15.13	\$0.00	\$53.06
5	50	\$27.71	\$13.00	\$15.57	\$0.00	\$56.28
6	55	\$30.48	\$13.00	\$16.01	\$0.00	\$59.49
7	60	\$33.25	\$13.00	\$16.46	\$0.00	\$62.71
8	65	\$36.02	\$13.00	\$16.90	\$0.00	\$65.92
9	70	\$38.79	\$13.00	\$17.34	\$0.00	\$69.13
10	75	\$41.56	\$13.00	\$17.80	\$0.00	\$72.36

Effective Date - 09/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$22.74	\$13.00	\$0.68	\$0.00	\$36.42
2	40	\$22.74	\$13.00	\$0.68	\$0.00	\$36.42
3	45	\$25.58	\$13.00	\$15.15	\$0.00	\$53.73
4	45	\$25.58	\$13.00	\$15.15	\$0.00	\$53.73
5	50	\$28.42	\$13.00	\$15.59	\$0.00	\$57.01
6	55	\$31.26	\$13.00	\$16.04	\$0.00	\$60.30
7	60	\$34.10	\$13.00	\$16.48	\$0.00	\$63.58
8	65	\$36.95	\$13.00	\$16.93	\$0.00	\$66.88
9	70	\$39.79	\$13.00	\$17.37	\$0.00	\$70.16
10	75	\$42.63	\$13.00	\$17.83	\$0.00	\$73.46

Notes :

App Prior 1/1/03; 30/35/40/45/50/55/65/70/75/80

Apprentice to Journeyworker Ratio:2:3***

ELEVATOR CONSTRUCTOR	01/01/2021	\$63.47	\$15.88	\$19.31	\$0.00	\$98.66
ELEVATOR CONSTRUCTORS LOCAL 4	01/01/2022	\$65.62	\$16.03	\$20.21	\$0.00	\$101.86

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Apprentice - ELEVATOR CONSTRUCTOR - Local 4						
Effective Date - 01/01/2021						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.74	\$15.88	\$0.00	\$0.00	\$47.62
2	55	\$34.91	\$15.88	\$19.31	\$0.00	\$70.10
3	65	\$41.26	\$15.88	\$19.31	\$0.00	\$76.45
4	70	\$44.43	\$15.88	\$19.31	\$0.00	\$79.62
5	80	\$50.78	\$15.88	\$19.31	\$0.00	\$85.97
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	01/01/2021	\$44.43	\$15.88	\$19.31	\$0.00	\$79.62
ELEVATOR CONSTRUCTORS LOCAL 4	01/01/2022	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17
For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"						
FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY)	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY	05/01/2021	\$45.88	\$13.50	\$15.70	\$0.00	\$75.08
OPERATING ENGINEERS LOCAL 4	11/01/2021	\$46.88	\$13.50	\$15.70	\$0.00	\$76.08
	05/01/2022	\$48.03	\$13.50	\$15.70	\$0.00	\$77.23
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY	05/01/2021	\$47.40	\$13.50	\$15.70	\$0.00	\$76.60
OPERATING ENGINEERS LOCAL 4	11/01/2021	\$48.41	\$13.50	\$15.70	\$0.00	\$77.61
	05/01/2022	\$49.57	\$13.50	\$15.70	\$0.00	\$78.77
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY	05/01/2021	\$22.91	\$13.50	\$15.70	\$0.00	\$52.11
OPERATING ENGINEERS LOCAL 4	11/01/2021	\$23.51	\$13.50	\$15.70	\$0.00	\$52.71
	05/01/2022	\$24.18	\$13.50	\$15.70	\$0.00	\$53.38
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIRE ALARM INSTALLER	03/01/2021	\$55.41	\$13.00	\$20.01	\$0.00	\$88.42
ELECTRICIANS LOCAL 103	09/01/2021	\$56.84	\$13.00	\$20.06	\$0.00	\$89.90
	03/01/2022	\$58.04	\$13.00	\$20.09	\$0.00	\$91.13
	09/01/2022	\$59.48	\$13.00	\$20.13	\$0.00	\$92.61
	03/01/2023	\$60.67	\$13.00	\$20.17	\$0.00	\$93.84
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>	03/01/2021	\$42.11	\$13.00	\$17.88	\$0.00	\$72.99
<i>LOCAL 103</i>	09/01/2021	\$43.77	\$13.00	\$18.00	\$0.00	\$74.77
	03/01/2022	\$45.27	\$13.00	\$18.12	\$0.00	\$76.39
	09/01/2022	\$46.99	\$13.00	\$18.24	\$0.00	\$78.23
	03/01/2023	\$48.54	\$13.00	\$18.37	\$0.00	\$79.91
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2021	\$41.31	\$13.75	\$15.80	\$0.00	\$70.86
	12/01/2021	\$42.26	\$13.75	\$15.80	\$0.00	\$71.81
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	06/01/2021	\$24.50	\$8.60	\$16.64	\$0.00	\$49.74
	12/01/2021	\$24.50	\$8.60	\$16.64	\$0.00	\$49.74
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE 1</i>	03/01/2021	\$48.59	\$9.40	\$19.25	\$0.00	\$77.24
	09/01/2021	\$49.39	\$9.40	\$19.25	\$0.00	\$78.04
	03/01/2022	\$50.19	\$9.40	\$19.25	\$0.00	\$78.84

Apprentice - FLOORCOVERER - Local 2168 Zone 1

Effective Date - 03/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.30	\$9.40	\$1.79	\$0.00	\$35.49
2	55	\$26.72	\$9.40	\$1.79	\$0.00	\$37.91
3	60	\$29.15	\$9.40	\$13.88	\$0.00	\$52.43
4	65	\$31.58	\$9.40	\$13.88	\$0.00	\$54.86
5	70	\$34.01	\$9.40	\$15.67	\$0.00	\$59.08
6	75	\$36.44	\$9.40	\$15.67	\$0.00	\$61.51
7	80	\$38.87	\$9.40	\$17.46	\$0.00	\$65.73
8	85	\$41.30	\$9.40	\$17.46	\$0.00	\$68.16

Effective Date - 09/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.70	\$9.40	\$1.79	\$0.00	\$35.89
2	55	\$27.16	\$9.40	\$1.79	\$0.00	\$38.35
3	60	\$29.63	\$9.40	\$13.88	\$0.00	\$52.91
4	65	\$32.10	\$9.40	\$13.88	\$0.00	\$55.38
5	70	\$34.57	\$9.40	\$15.67	\$0.00	\$59.64
6	75	\$37.04	\$9.40	\$15.67	\$0.00	\$62.11
7	80	\$39.51	\$9.40	\$17.46	\$0.00	\$66.37
8	85	\$41.98	\$9.40	\$17.46	\$0.00	\$68.84

Notes: Steps are 750 hrs.

% After 09/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)

Step 1&2 \$33.03/ 3&4 \$39.64/ 5&6 \$59.08/ 7&8 \$65.73

Apprentice to Journeyworker Ratio:1:1

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2021	\$50.73	\$13.75	\$15.80	\$0.00	\$80.28
	12/01/2021	\$51.88	\$13.75	\$15.80	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
GENERATOR/LIGHTING PLANT/HEATERS OPERATING ENGINEERS LOCAL 4	06/01/2021	\$33.40	\$13.75	\$15.80	\$0.00	\$62.95
For apprentice rates see "Apprentice- OPERATING ENGINEERS"	12/01/2021	\$34.19	\$13.75	\$15.80	\$0.00	\$63.74
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) GLAZIERS LOCAL 35 (ZONE 2)	01/01/2021	\$41.56	\$8.25	\$22.75	\$0.00	\$72.56

Apprentice - GLAZIER - Local 35 Zone 2

Effective Date - 01/01/2021

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

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

HOISTING ENGINEER/CRANES/GRADALLS OPERATING ENGINEERS LOCAL 4	06/01/2021	\$50.73	\$13.75	\$15.80	\$0.00	\$80.28
	12/01/2021	\$51.88	\$13.75	\$15.80	\$0.00	\$81.43

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Apprentice - OPERATING ENGINEERS - Local 4						
Effective Date - 06/01/2021						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$27.90	\$13.75	\$0.00	\$0.00	\$41.65
2	60	\$30.44	\$13.75	\$15.80	\$0.00	\$59.99
3	65	\$32.97	\$13.75	\$15.80	\$0.00	\$62.52
4	70	\$35.51	\$13.75	\$15.80	\$0.00	\$65.06
5	75	\$38.05	\$13.75	\$15.80	\$0.00	\$67.60
6	80	\$40.58	\$13.75	\$15.80	\$0.00	\$70.13
7	85	\$43.12	\$13.75	\$15.80	\$0.00	\$72.67
8	90	\$45.66	\$13.75	\$15.80	\$0.00	\$75.21
Effective Date - 12/01/2021						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$28.53	\$13.75	\$0.00	\$0.00	\$42.28
2	60	\$31.13	\$13.75	\$15.80	\$0.00	\$60.68
3	65	\$33.72	\$13.75	\$15.80	\$0.00	\$63.27
4	70	\$36.32	\$13.75	\$15.80	\$0.00	\$65.87
5	75	\$38.91	\$13.75	\$15.80	\$0.00	\$68.46
6	80	\$41.50	\$13.75	\$15.80	\$0.00	\$71.05
7	85	\$44.10	\$13.75	\$15.80	\$0.00	\$73.65
8	90	\$46.69	\$13.75	\$15.80	\$0.00	\$76.24
Notes:						
Apprentice to Journeyworker Ratio:1:6						
HVAC (DUCTWORK)	08/01/2021	\$51.95	\$13.80	\$25.60	\$2.74	\$94.09
SHEETMETAL WORKERS LOCAL 17 - A	02/01/2022	\$53.70	\$13.80	\$25.60	\$2.79	\$95.89
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (ELECTRICAL CONTROLS)	03/01/2021	\$55.41	\$13.00	\$20.01	\$0.00	\$88.42
ELECTRICIANS LOCAL 103	09/01/2021	\$56.84	\$13.00	\$20.06	\$0.00	\$89.90
	03/01/2022	\$58.04	\$13.00	\$20.09	\$0.00	\$91.13
	09/01/2022	\$59.48	\$13.00	\$20.13	\$0.00	\$92.61
	03/01/2023	\$60.67	\$13.00	\$20.17	\$0.00	\$93.84
For apprentice rates see "Apprentice- ELECTRICIAN"						
HVAC (TESTING AND BALANCING - AIR)	08/01/2021	\$51.95	\$13.80	\$25.60	\$2.74	\$94.09
SHEETMETAL WORKERS LOCAL 17 - A	02/01/2022	\$53.70	\$13.80	\$25.60	\$2.79	\$95.89
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING - WATER)	03/01/2021	\$57.94	\$11.70	\$20.24	\$0.00	\$89.88
PIPEFITTERS LOCAL 537						
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC	03/01/2021	\$57.94	\$11.70	\$20.24	\$0.00	\$89.88
PIPEFITTERS LOCAL 537						
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HYDRAULIC DRILLS <i>LABORERS - ZONE 2</i>	06/01/2021	\$35.75	\$8.60	\$16.64	\$0.00	\$60.99
	12/01/2021	\$36.66	\$8.60	\$16.64	\$0.00	\$61.90
	06/01/2022	\$37.56	\$8.60	\$16.64	\$0.00	\$62.80
	12/01/2022	\$38.41	\$8.60	\$16.64	\$0.00	\$63.65
	06/01/2023	\$39.31	\$8.60	\$16.64	\$0.00	\$64.55
	12/01/2023	\$40.21	\$8.60	\$16.64	\$0.00	\$65.45
For apprentice rates see "Apprentice- LABORER"						
HYDRAULIC DRILLS (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	06/01/2021	\$35.75	\$8.60	\$16.64	\$0.00	\$60.99
	12/01/2021	\$36.66	\$8.60	\$16.64	\$0.00	\$61.90
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
INSULATOR (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	09/01/2020	\$49.00	\$13.80	\$17.14	\$0.00	\$79.94
	09/01/2021	\$51.40	\$13.80	\$17.14	\$0.00	\$82.34
	09/01/2022	\$53.85	\$13.80	\$17.14	\$0.00	\$84.79

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

Effective Date - 09/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.50	\$13.80	\$12.42	\$0.00	\$50.72
2	60	\$29.40	\$13.80	\$13.36	\$0.00	\$56.56
3	70	\$34.30	\$13.80	\$14.31	\$0.00	\$62.41
4	80	\$39.20	\$13.80	\$15.25	\$0.00	\$68.25

Effective Date - 09/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.70	\$13.80	\$12.42	\$0.00	\$51.92
2	60	\$30.84	\$13.80	\$13.36	\$0.00	\$58.00
3	70	\$35.98	\$13.80	\$14.31	\$0.00	\$64.09
4	80	\$41.12	\$13.80	\$15.25	\$0.00	\$70.17

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (LAWRENCE AREA)</i>	09/16/2020	\$44.25	\$8.10	\$25.10	\$0.00	\$77.45
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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - IRONWORKER - Local 7 Lawrence

Effective Date - 09/16/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$26.55	\$8.10	\$25.10	\$0.00	\$59.75
2	70	\$30.98	\$8.10	\$25.10	\$0.00	\$64.18
3	75	\$33.19	\$8.10	\$25.10	\$0.00	\$66.39
4	80	\$35.40	\$8.10	\$25.10	\$0.00	\$68.60
5	85	\$37.61	\$8.10	\$25.10	\$0.00	\$70.81
6	90	\$39.83	\$8.10	\$25.10	\$0.00	\$73.03

Notes:

Structural 1:6; Ornamental 1:4

Apprentice to Journeyworker Ratio:

JACKHAMMER & PAVING BREAKER OPERATOR	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
LABORERS - ZONE 2	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
	06/01/2022	\$37.06	\$8.60	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.91	\$8.60	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.81	\$8.60	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.71	\$8.60	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
LABORER	06/01/2021	\$35.00	\$8.60	\$16.64	\$0.00	\$60.24
LABORERS - ZONE 2	12/01/2021	\$35.91	\$8.60	\$16.64	\$0.00	\$61.15
	06/01/2022	\$36.81	\$8.60	\$16.64	\$0.00	\$62.05
	12/01/2022	\$37.66	\$8.60	\$16.64	\$0.00	\$62.90
	06/01/2023	\$38.56	\$8.60	\$16.64	\$0.00	\$63.80
	12/01/2023	\$39.46	\$8.60	\$16.64	\$0.00	\$64.70

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Apprentice - LABORER - Zone 2						
Effective Date - 06/01/2021						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$21.00	\$8.60	\$16.64	\$0.00	\$46.24
2	70	\$24.50	\$8.60	\$16.64	\$0.00	\$49.74
3	80	\$28.00	\$8.60	\$16.64	\$0.00	\$53.24
4	90	\$31.50	\$8.60	\$16.64	\$0.00	\$56.74
Effective Date - 12/01/2021						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$21.55	\$8.60	\$16.64	\$0.00	\$46.79
2	70	\$25.14	\$8.60	\$16.64	\$0.00	\$50.38
3	80	\$28.73	\$8.60	\$16.64	\$0.00	\$53.97
4	90	\$32.32	\$8.60	\$16.64	\$0.00	\$57.56
Notes:						
Apprentice to Journeyworker Ratio:1:5						
LABORER (HEAVY & HIGHWAY)	06/01/2021	\$35.00	\$8.60	\$16.64	\$0.00	\$60.24
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2021	\$35.91	\$8.60	\$16.64	\$0.00	\$61.15

Apprentice - LABORER (Heavy & Highway) - Zone 2

Effective Date - 06/01/2021						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$21.00	\$8.60	\$16.64	\$0.00	\$46.24
2	70	\$24.50	\$8.60	\$16.64	\$0.00	\$49.74
3	80	\$28.00	\$8.60	\$16.64	\$0.00	\$53.24
4	90	\$31.50	\$8.60	\$16.64	\$0.00	\$56.74
Effective Date - 12/01/2021						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$21.55	\$8.60	\$16.64	\$0.00	\$46.79
2	70	\$25.14	\$8.60	\$16.64	\$0.00	\$50.38
3	80	\$28.73	\$8.60	\$16.64	\$0.00	\$53.97
4	90	\$32.32	\$8.60	\$16.64	\$0.00	\$57.56
Notes:						
Apprentice to Journeyworker Ratio:1:5						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: CARPENTER TENDER <i>LABORERS - ZONE 2</i>	06/01/2021	\$35.00	\$8.60	\$16.64	\$0.00	\$60.24
	12/01/2021	\$35.91	\$8.60	\$16.64	\$0.00	\$61.15
	06/01/2022	\$36.81	\$8.60	\$16.64	\$0.00	\$62.05
	12/01/2022	\$37.66	\$8.60	\$16.64	\$0.00	\$62.90
	06/01/2023	\$38.56	\$8.60	\$16.64	\$0.00	\$63.80
	12/01/2023	\$39.46	\$8.60	\$16.64	\$0.00	\$64.70
For apprentice rates see "Apprentice- LABORER"						
LABORER: CEMENT FINISHER TENDER <i>LABORERS - ZONE 2</i>	06/01/2021	\$35.00	\$8.60	\$16.64	\$0.00	\$60.24
	12/01/2021	\$35.91	\$8.60	\$16.64	\$0.00	\$61.15
	06/01/2022	\$36.81	\$8.60	\$16.64	\$0.00	\$62.05
	12/01/2022	\$37.66	\$8.60	\$16.64	\$0.00	\$62.90
	06/01/2023	\$38.56	\$8.60	\$16.64	\$0.00	\$63.80
	12/01/2023	\$39.46	\$8.60	\$16.64	\$0.00	\$64.70
For apprentice rates see "Apprentice- LABORER"						
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER <i>LABORERS - ZONE 2</i>	06/01/2021	\$35.09	\$8.60	\$16.70	\$0.00	\$60.39
	12/01/2021	\$36.00	\$8.60	\$16.70	\$0.00	\$61.30
	06/01/2022	\$36.90	\$8.60	\$16.70	\$0.00	\$62.20
	12/01/2022	\$37.75	\$8.60	\$16.70	\$0.00	\$63.05
	06/01/2023	\$38.65	\$8.60	\$16.70	\$0.00	\$63.95
	12/01/2023	\$39.55	\$8.60	\$16.70	\$0.00	\$64.85
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER <i>LABORERS - ZONE 2</i>	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
	06/01/2022	\$37.06	\$8.60	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.91	\$8.60	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.81	\$8.60	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.71	\$8.60	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 2</i>	06/01/2021	\$35.00	\$8.60	\$16.64	\$0.00	\$60.24
	12/01/2021	\$35.91	\$8.60	\$16.64	\$0.00	\$61.15
	06/01/2022	\$36.81	\$8.60	\$16.64	\$0.00	\$62.05
	12/01/2022	\$37.66	\$8.60	\$16.64	\$0.00	\$62.90
	06/01/2023	\$38.56	\$8.60	\$16.64	\$0.00	\$63.80
	12/01/2023	\$39.46	\$8.60	\$16.64	\$0.00	\$64.70
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 2</i>	06/01/2021	\$35.00	\$8.60	\$16.64	\$0.00	\$60.24
	12/01/2021	\$35.91	\$8.60	\$16.64	\$0.00	\$61.15
	06/01/2022	\$36.81	\$8.60	\$16.64	\$0.00	\$62.05
	12/01/2022	\$37.66	\$8.60	\$16.64	\$0.00	\$62.90
	06/01/2023	\$38.56	\$8.60	\$16.64	\$0.00	\$63.80
	12/01/2023	\$39.46	\$8.60	\$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"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LASER BEAM OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
	06/01/2022	\$37.06	\$8.60	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.91	\$8.60	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.81	\$8.60	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.71	\$8.60	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2021	\$43.69	\$11.39	\$20.30	\$0.00	\$75.38
	02/01/2022	\$44.16	\$11.39	\$20.30	\$0.00	\$75.85

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

Effective Date - 08/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.85	\$11.39	\$20.30	\$0.00	\$53.54
2	60	\$26.21	\$11.39	\$20.30	\$0.00	\$57.90
3	70	\$30.58	\$11.39	\$20.30	\$0.00	\$62.27
4	80	\$34.95	\$11.39	\$20.30	\$0.00	\$66.64
5	90	\$39.32	\$11.39	\$20.30	\$0.00	\$71.01

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.08	\$11.39	\$20.30	\$0.00	\$53.77
2	60	\$26.50	\$11.39	\$20.30	\$0.00	\$58.19
3	70	\$30.91	\$11.39	\$20.30	\$0.00	\$62.60
4	80	\$35.33	\$11.39	\$20.30	\$0.00	\$67.02
5	90	\$39.74	\$11.39	\$20.30	\$0.00	\$71.43

Notes:

Apprentice to Journeyworker Ratio:1:3

MARBLE MASONS,TILELAYERS & TERRAZZO MECH <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2021	\$57.17	\$11.39	\$22.24	\$0.00	\$90.80
	02/01/2022	\$57.74	\$11.39	\$22.24	\$0.00	\$91.37

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 - 08/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.59	\$11.39	\$22.24	\$0.00	\$62.22
2	60	\$34.30	\$11.39	\$22.24	\$0.00	\$67.93
3	70	\$40.02	\$11.39	\$22.24	\$0.00	\$73.65
4	80	\$45.74	\$11.39	\$22.24	\$0.00	\$79.37
5	90	\$51.45	\$11.39	\$22.24	\$0.00	\$85.08

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.87	\$11.39	\$22.24	\$0.00	\$62.50
2	60	\$34.64	\$11.39	\$22.24	\$0.00	\$68.27
3	70	\$40.42	\$11.39	\$22.24	\$0.00	\$74.05
4	80	\$46.19	\$11.39	\$22.24	\$0.00	\$79.82
5	90	\$51.97	\$11.39	\$22.24	\$0.00	\$85.60

Notes:

Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES)	06/01/2021	\$50.19	\$13.75	\$15.80	\$0.00	\$79.74
OPERATING ENGINEERS LOCAL 4	12/01/2021	\$51.33	\$13.75	\$15.80	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MECHANICS MAINTENANCE	06/01/2021	\$50.19	\$13.75	\$15.80	\$0.00	\$79.74
OPERATING ENGINEERS LOCAL 4	12/01/2021	\$51.33	\$13.75	\$15.80	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MILLWRIGHT (Zone 2)	03/01/2021	\$39.42	\$8.58	\$21.57	\$0.00	\$69.57
MILLWRIGHTS LOCAL 1121 - Zone 2	01/03/2022	\$40.67	\$8.58	\$21.57	\$0.00	\$70.82
	01/02/2023	\$41.92	\$8.58	\$21.57	\$0.00	\$72.07

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - MILLWRIGHT - Local 1121 Zone 2

Effective Date - 03/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$21.68	\$8.58	\$5.72	\$0.00	\$35.98
2	65	\$25.62	\$8.58	\$17.93	\$0.00	\$52.13
3	75	\$29.57	\$8.58	\$18.98	\$0.00	\$57.13
4	85	\$33.51	\$8.58	\$20.01	\$0.00	\$62.10

Effective Date - 01/03/2022

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

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

Apprentice to Journeyworker Ratio:1:5

MORTAR MIXER LABORERS - ZONE 2	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
	06/01/2022	\$37.06	\$8.60	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.91	\$8.60	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.81	\$8.60	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.71	\$8.60	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
OILER (OTHER THAN TRUCK CRANES,GRADALLS) OPERATING ENGINEERS LOCAL 4	06/01/2021	\$23.40	\$13.75	\$15.80	\$0.00	\$52.95
	12/01/2021	\$23.98	\$13.75	\$15.80	\$0.00	\$53.53
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OILER (TRUCK CRANES, GRADALLS) OPERATING ENGINEERS LOCAL 4	06/01/2021	\$28.26	\$13.75	\$15.80	\$0.00	\$57.81
	12/01/2021	\$28.94	\$13.75	\$15.80	\$0.00	\$58.49
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OTHER POWER DRIVEN EQUIPMENT - CLASS II OPERATING ENGINEERS LOCAL 4	06/01/2021	\$50.19	\$13.75	\$15.80	\$0.00	\$79.74
	12/01/2021	\$51.33	\$13.75	\$15.80	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PAINTER (BRIDGES/TANKS) PAINTERS LOCAL 35 - ZONE 2	01/01/2021	\$52.06	\$8.25	\$22.75	\$0.00	\$83.06

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 01/01/2021

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

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

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

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

Effective Date - 01/01/2021

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

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint

Effective Date - 01/01/2021

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

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

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

Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW

Effective Date - 01/01/2021

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

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT						
Effective Date - 01/01/2021						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.81	\$8.25	\$0.00	\$0.00	\$28.06
2	55	\$21.79	\$8.25	\$6.16	\$0.00	\$36.20
3	60	\$23.77	\$8.25	\$6.72	\$0.00	\$38.74
4	65	\$25.75	\$8.25	\$7.28	\$0.00	\$41.28
5	70	\$27.73	\$8.25	\$19.39	\$0.00	\$55.37
6	75	\$29.72	\$8.25	\$19.95	\$0.00	\$57.92
7	80	\$31.70	\$8.25	\$20.51	\$0.00	\$60.46
8	90	\$35.66	\$8.25	\$21.63	\$0.00	\$65.54

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY)	06/01/2021	\$35.00	\$8.60	\$16.64	\$0.00	\$60.24
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2021	\$35.91	\$8.60	\$16.64	\$0.00	\$61.15
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
PANEL & PICKUP TRUCKS DRIVER	08/01/2021	\$35.78	\$13.41	\$14.82	\$0.00	\$64.01
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/01/2021	\$35.78	\$13.41	\$16.01	\$0.00	\$65.20
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)						

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

PIPEFITTER & STEAMFITTER	03/01/2021	\$57.94	\$11.70	\$20.24	\$0.00	\$89.88
PIPEFITTERS LOCAL 537						

Issue Date: 08/06/2021

Wage Request Number: 20210806-015

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WAGE RATES
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LRTA Roof
Replacement

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - PIPEFITTER - Local 537

Effective Date - 03/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$23.18	\$11.70	\$8.25	\$0.00	\$43.13
2	45	\$26.07	\$11.70	\$20.24	\$0.00	\$58.01
3	60	\$34.76	\$11.70	\$20.24	\$0.00	\$66.70
4	70	\$40.56	\$11.70	\$20.24	\$0.00	\$72.50
5	80	\$46.35	\$11.70	\$20.24	\$0.00	\$78.29

Notes:

** 1:3; 3:15; 1:10 thereafter / Steps are 1 yr.

Refrig/AC Mechanic **1:1;1:2;2:4;3:6;4:8;5:10;6:12;7:14;8:17;9:20;10:23(Max)

Apprentice to Journeyworker Ratio:**

PIPELAYER	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
LABORERS - ZONE 2	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
	06/01/2022	\$37.06	\$8.60	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.91	\$8.60	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.81	\$8.60	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.71	\$8.60	\$16.64	\$0.00	\$64.95

For apprentice rates see "Apprentice- LABORER"

PIPELAYER (HEAVY & HIGHWAY)	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40

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

PLUMBERS & GASFITTERS	03/01/2021	\$60.19	\$13.57	\$17.26	\$0.00	\$91.02
PLUMBERS & GASFITTERS LOCAL 12						

Apprentice - PLUMBER/GASFITTER - Local 12

Effective Date - 03/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$21.07	\$13.57	\$6.24	\$0.00	\$40.88
2	40	\$24.08	\$13.57	\$7.08	\$0.00	\$44.73
3	55	\$33.10	\$13.57	\$9.63	\$0.00	\$56.30
4	65	\$39.12	\$13.57	\$11.33	\$0.00	\$64.02
5	75	\$45.14	\$13.57	\$13.03	\$0.00	\$71.74

Notes:

** 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr

Step4 with lic\$67.89, Step5 with lic\$75.59

Apprentice to Journeyworker Ratio:**

PNEUMATIC CONTROLS (TEMP.)	03/01/2021	\$57.94	\$11.70	\$20.24	\$0.00	\$89.88
PIPEFITTERS LOCAL 537						

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
	06/01/2022	\$37.06	\$8.60	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.91	\$8.60	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.81	\$8.60	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.71	\$8.60	\$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>	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	06/01/2021	\$36.00	\$8.60	\$16.64	\$0.00	\$61.24
	12/01/2021	\$36.91	\$8.60	\$16.64	\$0.00	\$62.15
	06/01/2022	\$37.81	\$8.60	\$16.64	\$0.00	\$63.05
	12/01/2022	\$38.66	\$8.60	\$16.64	\$0.00	\$63.90
	06/01/2023	\$39.56	\$8.60	\$16.64	\$0.00	\$64.80
	12/01/2023	\$40.46	\$8.60	\$16.64	\$0.00	\$65.70
For apprentice rates see "Apprentice- LABORER"						
POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	06/01/2021	\$36.00	\$8.60	\$16.64	\$0.00	\$61.24
	12/01/2021	\$36.91	\$8.60	\$16.64	\$0.00	\$62.15
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2021	\$50.73	\$13.75	\$15.80	\$0.00	\$80.28
	12/01/2021	\$51.88	\$13.75	\$15.80	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2021	\$50.73	\$13.75	\$15.80	\$0.00	\$80.28
	12/01/2021	\$51.88	\$13.75	\$15.80	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2021	\$33.40	\$13.75	\$15.80	\$0.00	\$62.95
	12/01/2021	\$34.19	\$13.75	\$15.80	\$0.00	\$63.74
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 170 - J.G. MacLellan (Lowell)</i>	05/01/2021	\$25.50	\$10.01	\$6.35	\$0.00	\$41.86
	01/01/2022	\$25.50	\$10.37	\$6.35	\$0.00	\$42.22
	05/01/2022	\$25.85	\$10.37	\$6.35	\$0.00	\$42.57
	01/01/2023	\$25.85	\$10.77	\$6.35	\$0.00	\$42.97
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2021	\$50.19	\$13.75	\$15.80	\$0.00	\$79.74
	12/01/2021	\$51.33	\$13.75	\$15.80	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
	06/01/2022	\$37.06	\$8.60	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.91	\$8.60	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.81	\$8.60	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.71	\$8.60	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2021	\$50.19	\$13.75	\$15.80	\$0.00	\$79.74
	12/01/2021	\$51.33	\$13.75	\$15.80	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ROOFER (Inc.Roofing Waterproofing &Roofing Damproofg) ROOFERS LOCAL 33	08/01/2021	\$47.03	\$12.28	\$18.15	\$0.00	\$77.46
	02/01/2022	\$48.46	\$12.28	\$18.15	\$0.00	\$78.89

Apprentice - ROOFER - Local 33

Effective Date - 08/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.52	\$12.28	\$4.56	\$0.00	\$40.36
2	60	\$28.22	\$12.28	\$18.15	\$0.00	\$58.65
3	65	\$30.57	\$12.28	\$18.15	\$0.00	\$61.00
4	75	\$35.27	\$12.28	\$18.15	\$0.00	\$65.70
5	85	\$39.98	\$12.28	\$18.15	\$0.00	\$70.41

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.23	\$12.28	\$4.56	\$0.00	\$41.07
2	60	\$29.08	\$12.28	\$18.15	\$0.00	\$59.51
3	65	\$31.50	\$12.28	\$18.15	\$0.00	\$61.93
4	75	\$36.35	\$12.28	\$18.15	\$0.00	\$66.78
5	85	\$41.19	\$12.28	\$18.15	\$0.00	\$71.62

Notes: ** 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1
Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.
(Hot Pitch Mechanics' receive \$1.00 hr. above ROOFER)

Apprentice to Journeyworker Ratio:**

ROOFER SLATE / TILE / PRECAST CONCRETE ROOFERS LOCAL 33	08/01/2021	\$47.28	\$12.28	\$18.15	\$0.00	\$77.71
	02/01/2022	\$48.71	\$12.28	\$18.15	\$0.00	\$79.14
For apprentice rates see "Apprentice- ROOFER"						
SHEETMETAL WORKER SHEETMETAL WORKERS LOCAL 17 - A	08/01/2021	\$51.95	\$13.80	\$25.60	\$2.74	\$94.09
	02/01/2022	\$53.70	\$13.80	\$25.60	\$2.79	\$95.89

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SHEET METAL WORKER - Local 17-A**Effective Date - 08/01/2021**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	42	\$21.82	\$13.80	\$6.01	\$0.00	\$41.63
2	42	\$21.82	\$13.80	\$6.01	\$0.00	\$41.63
3	47	\$24.42	\$13.80	\$11.26	\$1.48	\$50.96
4	47	\$24.42	\$13.80	\$11.26	\$1.48	\$50.96
5	52	\$27.01	\$13.80	\$12.23	\$1.59	\$54.63
6	52	\$27.01	\$13.80	\$12.48	\$1.60	\$54.89
7	60	\$31.17	\$13.80	\$13.87	\$1.77	\$60.61
8	65	\$33.77	\$13.80	\$14.84	\$1.87	\$64.28
9	75	\$38.96	\$13.80	\$16.77	\$2.09	\$71.62
10	85	\$44.16	\$13.80	\$18.20	\$2.28	\$78.44

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	42	\$22.55	\$13.80	\$6.01	\$0.00	\$42.36
2	42	\$22.55	\$13.80	\$6.01	\$0.00	\$42.36
3	47	\$25.24	\$13.80	\$11.26	\$1.51	\$51.81
4	47	\$25.24	\$13.80	\$11.26	\$1.51	\$51.81
5	52	\$27.92	\$13.80	\$12.23	\$1.62	\$55.57
6	52	\$27.92	\$13.80	\$12.48	\$1.63	\$55.83
7	60	\$32.22	\$13.80	\$13.87	\$1.80	\$61.69
8	65	\$34.91	\$13.80	\$14.84	\$1.91	\$65.46
9	75	\$40.28	\$13.80	\$16.77	\$2.13	\$72.98
10	85	\$45.65	\$13.80	\$18.20	\$2.33	\$79.98

Notes:

Steps are 6 mos.

Apprentice to Journeyworker Ratio:1:4

SPECIALIZED EARTH MOVING EQUIP < 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	08/01/2021	\$36.24	\$13.41	\$14.82	\$0.00	\$64.47
	12/01/2021	\$36.24	\$13.41	\$16.01	\$0.00	\$65.66
SPECIALIZED EARTH MOVING EQUIP > 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	08/01/2021	\$36.53	\$13.41	\$14.82	\$0.00	\$64.76
	12/01/2021	\$36.53	\$13.41	\$16.01	\$0.00	\$65.95
SPRINKLER FITTER SPRINKLER FITTERS LOCAL 550 - (Section A) Zone I	03/01/2021	\$62.45	\$10.00	\$21.25	\$0.00	\$93.70

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

Effective Date - 03/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$21.86	\$10.00	\$11.99	\$0.00	\$43.85
2	40	\$24.98	\$10.00	\$12.70	\$0.00	\$47.68
3	45	\$28.10	\$10.00	\$13.41	\$0.00	\$51.51
4	50	\$31.23	\$10.00	\$14.13	\$0.00	\$55.36
5	55	\$34.35	\$10.00	\$14.84	\$0.00	\$59.19
6	60	\$37.47	\$10.00	\$15.55	\$0.00	\$63.02
7	65	\$40.59	\$10.00	\$16.26	\$0.00	\$66.85
8	70	\$43.72	\$10.00	\$16.98	\$0.00	\$70.70
9	75	\$46.84	\$10.00	\$17.69	\$0.00	\$74.53
10	80	\$49.96	\$10.00	\$18.40	\$0.00	\$78.36

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	06/01/2021	\$50.19	\$13.75	\$15.80	\$0.00	\$79.74
OPERATING ENGINEERS LOCAL 4	12/01/2021	\$51.33	\$13.75	\$15.80	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN	06/01/2021	\$50.19	\$13.75	\$15.80	\$0.00	\$79.74
OPERATING ENGINEERS LOCAL 4	12/01/2021	\$51.33	\$13.75	\$15.80	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TELECOMMUNICATION TECHNICIAN	03/01/2021	\$42.11	\$13.00	\$17.88	\$0.00	\$72.99
ELECTRICIANS LOCAL 103	09/01/2021	\$43.77	\$13.00	\$18.00	\$0.00	\$74.77
	03/01/2022	\$45.27	\$13.00	\$18.12	\$0.00	\$76.39
	09/01/2022	\$46.99	\$13.00	\$18.24	\$0.00	\$78.23
	03/01/2023	\$48.54	\$13.00	\$18.37	\$0.00	\$79.91

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - TELECOMMUNICATION TECHNICIAN - Local 103

Effective Date - 03/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$18.95	\$13.00	\$0.57	\$0.00	\$32.52
2	45	\$18.95	\$13.00	\$0.57	\$0.00	\$32.52
3	50	\$21.06	\$13.00	\$14.51	\$0.00	\$48.57
4	50	\$21.06	\$13.00	\$14.51	\$0.00	\$48.57
5	55	\$23.16	\$13.00	\$14.84	\$0.00	\$51.00
6	60	\$25.27	\$13.00	\$15.18	\$0.00	\$53.45
7	65	\$27.37	\$13.00	\$15.52	\$0.00	\$55.89
8	70	\$29.48	\$13.00	\$15.85	\$0.00	\$58.33
9	75	\$31.58	\$13.00	\$16.20	\$0.00	\$60.78
10	80	\$33.69	\$13.00	\$16.53	\$0.00	\$63.22

Effective Date - 09/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$19.70	\$13.00	\$0.59	\$0.00	\$33.29
2	45	\$19.70	\$13.00	\$0.59	\$0.00	\$33.29
3	50	\$21.89	\$13.00	\$14.57	\$0.00	\$49.46
4	50	\$21.89	\$13.00	\$14.57	\$0.00	\$49.46
5	55	\$24.07	\$13.00	\$14.91	\$0.00	\$51.98
6	60	\$26.26	\$13.00	\$15.26	\$0.00	\$54.52
7	65	\$28.45	\$13.00	\$15.59	\$0.00	\$57.04
8	70	\$30.64	\$13.00	\$15.94	\$0.00	\$59.58
9	75	\$32.83	\$13.00	\$16.28	\$0.00	\$62.11
10	80	\$35.02	\$13.00	\$16.63	\$0.00	\$64.65

Notes:

Apprentice to Journeyworker Ratio:1:1

TERRAZZO FINISHERS	08/01/2021	\$56.09	\$11.39	\$22.25	\$0.00	\$89.73
BRICKLAYERS LOCAL 3 - MARBLE & TILE	02/01/2022	\$56.68	\$11.39	\$22.25	\$0.00	\$90.32

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile

Effective Date - 08/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.05	\$11.39	\$22.25	\$0.00	\$61.69
2	60	\$33.65	\$11.39	\$22.25	\$0.00	\$67.29
3	70	\$39.26	\$11.39	\$22.25	\$0.00	\$72.90
4	80	\$44.87	\$11.39	\$22.25	\$0.00	\$78.51
5	90	\$50.48	\$11.39	\$22.25	\$0.00	\$84.12

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.34	\$11.39	\$22.25	\$0.00	\$61.98
2	60	\$34.01	\$11.39	\$22.25	\$0.00	\$67.65
3	70	\$39.68	\$11.39	\$22.25	\$0.00	\$73.32
4	80	\$45.34	\$11.39	\$22.25	\$0.00	\$78.98
5	90	\$51.01	\$11.39	\$22.25	\$0.00	\$84.65

Notes:

Apprentice to Journeyworker Ratio:1:3

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2021	\$42.07	\$8.60	\$17.72	\$0.00	\$68.39
	12/01/2021	\$43.08	\$8.60	\$17.72	\$0.00	\$69.40
For apprentice rates see "Apprentice- LABORER"						
TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2021	\$40.79	\$8.60	\$17.72	\$0.00	\$67.11
	12/01/2021	\$41.80	\$8.60	\$17.72	\$0.00	\$68.12
For apprentice rates see "Apprentice- LABORER"						
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2021	\$40.67	\$8.60	\$17.72	\$0.00	\$66.99
	12/01/2021	\$41.68	\$8.60	\$17.72	\$0.00	\$68.00
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2021	\$50.19	\$13.75	\$15.80	\$0.00	\$79.74
	12/01/2021	\$51.33	\$13.75	\$15.80	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	08/01/2021	\$36.82	\$13.41	\$14.82	\$0.00	\$65.05
	12/01/2021	\$36.82	\$13.41	\$16.01	\$0.00	\$66.24
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	06/01/2021	\$52.90	\$8.60	\$18.17	\$0.00	\$79.67
	12/01/2021	\$53.91	\$8.60	\$18.17	\$0.00	\$80.68
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	06/01/2021	\$54.90	\$8.60	\$18.17	\$0.00	\$81.67
	12/01/2021	\$55.91	\$8.60	\$18.17	\$0.00	\$82.68
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2021	\$44.97	\$8.60	\$18.17	\$0.00	\$71.74
	12/01/2021	\$45.98	\$8.60	\$18.17	\$0.00	\$72.75
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2021	\$46.97	\$8.60	\$18.17	\$0.00	\$73.74
	12/01/2021	\$47.98	\$8.60	\$18.17	\$0.00	\$74.75

Issue Date: 08/06/2021

Wage Request Number: 20210806-015

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WAGE RATES
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LRTA Roof
Replacement

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	08/01/2021	\$36.24	\$13.41	\$14.82	\$0.00	\$64.47
	12/01/2021	\$36.24	\$13.41	\$16.01	\$0.00	\$65.66
WAGON DRILL OPERATOR LABORERS - ZONE 2	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
	06/01/2022	\$37.06	\$8.60	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.91	\$8.60	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.81	\$8.60	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.71	\$8.60	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
WAGON DRILL OPERATOR (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2021	\$35.25	\$8.60	\$16.64	\$0.00	\$60.49
	12/01/2021	\$36.16	\$8.60	\$16.64	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
WASTE WATER PUMP OPERATOR OPERATING ENGINEERS LOCAL 4	06/01/2021	\$50.73	\$13.75	\$15.80	\$0.00	\$80.28
	12/01/2021	\$51.88	\$13.75	\$15.80	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER PLUMBERS & GASFITTERS LOCAL 12	03/01/2021	\$60.19	\$13.57	\$17.26	\$0.00	\$91.02
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						
Outside Electrical - East						
CABLE TECHNICIAN (Power Zone) OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	08/30/2020	\$29.67	\$9.25	\$1.89	\$0.00	\$40.81
For apprentice rates see "Apprentice- LINEMAN"						
CABLEMAN (Underground Ducts & Cables) OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	08/30/2020	\$42.03	\$9.25	\$10.27	\$0.00	\$61.55
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN CDL OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	08/30/2020	\$34.62	\$9.25	\$10.07	\$0.00	\$53.94
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	08/30/2020	\$27.20	\$9.25	\$1.82	\$0.00	\$38.27
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class A CDL) OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	08/30/2020	\$42.03	\$9.25	\$14.35	\$0.00	\$65.63
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class B CDL) OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	08/30/2020	\$37.09	\$9.25	\$10.87	\$0.00	\$57.21
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	08/30/2020	\$27.20	\$9.25	\$1.82	\$0.00	\$38.27
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN -Inexperienced (<2000 Hrs.) OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	08/30/2020	\$22.25	\$9.25	\$1.82	\$0.00	\$33.32
For apprentice rates see "Apprentice- LINEMAN"						
JOURNEYMAN LINEMAN OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104	08/30/2020	\$49.45	\$9.25	\$17.48	\$0.00	\$76.18

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - LINEMAN (Outside Electrical) - East Local 104

Effective Date - 08/30/2020

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

Notes:

Apprentice to Journeyworker Ratio:1:2

TELEDATA CABLE SPLICER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/04/2019	\$30.73	\$4.70	\$3.17	\$0.00	\$38.60
TELEDATA LINEMAN/EQUIPMENT OPERATOR <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/04/2019	\$28.93	\$4.70	\$3.14	\$0.00	\$36.77
TELEDATA WIREMAN/INSTALLER/TECHNICIAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/04/2019	\$28.93	\$4.70	\$3.14	\$0.00	\$36.77

Additional Apprentice Information:

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

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

All steps are six months (1000 hours.)

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

** Multiple ratios are listed in the comment field.

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

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

SECTION 01-1000

SUMMARY OF THE WORK

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Attention is directed to the Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Division 1 Specifications which are hereby made a part of this section.

1.02 PROJECT IDENTIFICATION

- A. General: The Project name is “**Gallagher Terminal & Maguire Transportation Center Roof Replacement Project**” as shown on the Contract Documents. Drawings and Specifications which are dated August 2, 2021.
- B. The project site is located at:
- Gallagher Terminal
117 Thorndike Street
Lowell, MA 01852
- Maguire Transportation Center
115 Thorndike Street
Lowell, MA 01852
- C. Contract Documents: Contract documents indicate the work of the Contract and related requirements and conditions that have an impact on the project. Related requirements and conditions that are indicated on the Contract Documents include, but are not necessarily limited to the following:
1. Existing site conditions and restrictions on use of the site.
 2. Requirements for Owner use and occupancy during Contract Work.
- D. Summary by Reference: Work of the Contract can be summarized by references to the Contract, General Conditions, Supplementary Conditions, Specification Sections, Drawings, addenda and modifications to the contract documents issued subsequent to the initial printing of this project manual and including but not necessarily limited to printed material referenced by any of these documents.

1.03 WORK UNDER THIS CONTRACT

- A. The work to be performed under this contract consists of executing and completing all work required at the Gallagher Terminal, MBTA property at 117 Thorndike Street, Lowell, MA and the Maguire Transportation Center, LRTA property at 115 Thorndike Street, Lowell, MA.

1. General Information:
 - a. This document describes the roof replacement at two buildings located at the Charles A. Gallagher Intermodal Transportation Center. The Project consists of one building with the removal of the existing membrane roof and insulation down to concrete deck and replacement with a new EPDM membrane roof with tapered insulation and blocking as indicated. The
 - b. The roof replacement at the Gallagher Terminal, MBTA property at 117 Thorndike Street, Lowell, MA consists of the removal of the existing membrane roof and insulation down to concrete deck and replacement with a new EPDM membrane roof with tapered insulation and blocking as indicated. This roof replacement requires a building permit issued by the Commonwealth of Massachusetts, Office of Public Safety and Inspections.
 - c. The roof replacement at the Maguire Transportation Center, LRTA property at 115 Thorndike Street, Lowell, MA consists of the removal of the existing membrane roof to concrete deck and replacement with a new EPDM membrane roof as indicated. This roof replacement requires a building permit issued by the City of Lowell, Division of Development Services.
 - d. The project shall be constructed so as to meet all requirements of the Massachusetts State Building Code, current edition, in addition to all other applicable codes and regulations.
 - e. Miscellaneous: All other associated work as indicated in the drawings and specifications.
- B. The scope of work, without limiting the generality thereof, includes all labor, materials, equipment, and services required to perform the work described fully in the drawings and specifications.
- C. Reference To Drawings: The work to be done under this Contract is shown on the following drawings:

GENERAL

COVER SHEET

G-001 INDEX OF DRAWINGS & BUILDING CODE INFORMATION

ARCHITECTURAL

A-001 ABBREVIATIONS, SYMBOLS, LEGENDS & GENERAL NOTES
A-101 GALLAGHER TERMINAL ROOF PLAN
A-102 MAGUIRE TRANSPORTATION CENTER ROOF PLAN (NORTH)
A-103 MAGUIRE TRANSPORTATION CENTER ROOF PLAN (SOUTH)
A-501 GALLAGHER TERMINAL ROOF DETAILS SHEET 1 OF 2
A-502 GALLAGHER TERMINAL ROOF DETAILS SHEET 2 OF 2
A-503 MAGUIRE TRANSPORTATION CENTER ROOF DETAILS

- D. Reference To Specifications: The work to be done under this Contract is shown on the following Technical Specifications:

Section 01 1000	SUMMARY OF WORK
Section 01 1060	REGULATORY REQUIREMENTS
Section 01 3100	PROJECT COORDINATION
Section 01 3200	SCHEDULES, REPORTS, PAYMENTS
Section 01 3300	SUBMITTAL PROCEDURES
Section 01 4000	QUALITY REQUIREMENTS
Section 01 4200	REFERENCES
Section 01 5000	TEMPORARY FACILITIES AND CONTROLS
Section 01 6000	PRODUCT REQUIREMENTS
Section 01 6100	SAFETY
Section 01 7700	CLOSEOUT PROCEDURES
Section 06 1000	ROUGH CARPENTRY
Section 07 0150.19	PREPARATION FOR REROOFING
Section 07 2200	THERMAL INSULATION
Section 07 5323	ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING
Section 07 7100	ROOF SPECIALTIES

- E. The Massachusetts Standard Labor Wage Rates and the Federal Davis Bacon Wage Rates, as outlined and included in the exhibits, will be used in the construction of this project. In the event of a difference in rates, the higher rate will prevail.

1.04 OWNER OCCUPANCY

- A. Beneficial Use and Occupancy: The Owner will occupy and use buildings, systems, and ground during the entire construction period.
1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from the Owner and authorities having jurisdiction.

1.05 COORDINATION

- A. The General 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 General Contractor shall do, or cause his agents to do, all cutting, fitting, adjusting, and repair necessary in order to make the several parts of the work come together properly.
1. Examine Contract Documents in advance of start of construction and identify in writing questions, irregularities, or interference to the Engineer in writing. Failure to identify and address such issues in advance becomes the sole responsibility of the Contractor. A conflict that would cause the reduction of the normal ceiling height of any occupied space is considered to be an interference.
- 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 planning and schedule established by the Contractor as approved by the Owner and Engineer. The work upon the site of the project shall commence promptly and be executed with full simultaneous progress. Work operations requiring the interruption of utilities, service, and access shall be scheduled so as to involve minimum disruption and inconvenience and to be expedited so as to insure minimum duration of any periods of disruption or inconvenience.

1.06 TIME OF COMPLETION

- A. The Contractor shall commence work immediately upon receipt of the executed contract and shall complete all work specified to the complete satisfaction of the Owner within ninety (90) days of receipt of the executed contract.

1.07 OWNER RESPONSIBILITIES

- A. The Owner shall provide access to all work areas as allowed for in approved schedule. The Contractor shall notify the Owner prior to working nights, weekend, or holiday hours.
- B. The Owner shall provide personnel to inform the Contractor of the characteristics of the mechanical and electrical systems.
- C. The Owner shall have personnel on call to provide the Contractor with assistance on building-related matters.

1.08 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies: The construction requirements of federal, state, municipal, or other political subdivision specifications exceeding the requirements of the codes, standards and approving bodies referenced herein shall be met and complied with. Comply with requirements of the National Fire Protection Association (NFPA) and Lowell Fire Department as directly appropriate to work and workmanship of this Contract.
- B. Worker's Qualifications: In acceptance or rejection of complete work, no allowance will be made for lack of skill on the part of the Contractor's forces performing such work. All Contractor personnel shall be accredited to conduct response actions in accordance with requirements of the Contract.
- C. Certificates and Permits: Upon completion of work, and prior to final payment, furnish formal certification of final inspections to the Engineer from authorities having jurisdiction and secure required permits, if any, from same. Additionally, prepare detailed diagrams and drawings which may be required by those authorities having jurisdiction.
- D. Source Quality Control: Products used throughout these specifications and as indicated on the Drawings are those companies having established reputations in the manufacture of the particular materials, equipment, or apparatus specified. Such products may be of their own make, or products of others for which they assume full responsibility when used in said outfits (which are not manufactured completely by them), and with replacement parts available.

E. Job Conditions:

1. Contractor shall be required to provide all utilities and services needed to perform the work.
2. Provide products of new and recent manufacture.
3. For each category of materials and equipment (Products), use material equipment of the same manufacturer and type.

1.09 EXAMINATION OF SITE AND DOCUMENTS

- A. A pre-bid conference will be held at the jobsite on the date and at the time indicated in the Invitation to Bid.
- B. Bidders shall be permitted to visit the site on a non-holiday week day acceptable to the Owner, between the hours of 9:00 a.m. and 3:00 p.m. to visually inspect the location of the work and existing conditions that may affect new work. Please contact Mr. Todd Bello at (978) 375-3791 to schedule a visit if needed.
- C. The bidders are expected to examine and to be thoroughly familiar with all contract documents and with the conditions under which the work is to be carried out. The Owner will not be responsible for errors, omissions, and/or charges for extra work arising from the General Contractors or Subcontractors failure to familiarize themselves with the Contract Documents, that he is familiar with the conditions and requirements of both where they require, in any part of the work a given result to be produced, that the contract documents are adequate and he will produce the required results.
- D. Contact: Graham Reich, Procurement and Compliance Coordinator
 Lowell Regional Transit Authority
 115 Thorndike Street
 Lowell, MA 01852
 Tel.: 978-459-0164 ext. 210

1.10 CONTRACTOR QUALIFICATION

- A. The Contractor shall have a valid Certificate of Eligibility issued by the Division of Capital Asset Management and Maintenance (DCAMM) in the category of Roofing. Also, refer to "Instructions to Bidders".
- B. The Contractor shall certify in writing that he has successfully performed on at least three construction projects of equivalent size and complexity.
- C. It is the Bidder's responsibility to obtain the necessary forms from DCAMM and make application to DCAMM not less than three weeks prior to advertised bid opening for DCAMM to evaluate the application and issue a Certificate of Eligibility.
- D. The Contractor's Updated Statement is not a public record as defined in MGL, Chapter 4, Section 7, and will not be open to public inspection.

1.11 SUPERVISION OF WORK

- A. The Contractor shall be held directly responsible for the correct installation of all work performed under this Contract. The Contractor must make a good repair, without expense to the Owner, of any part of the new work, or existing work to remain, which may become inoperative on account of leaving the work unprotected or unsupervised during construction of the system or which may break or give out in any manner by reason of poor workmanship, defective materials or any lack of space to allow for expansion and contraction of the work during the Contractor's warranty period, from the date of final acceptance of the work by the Owner.

1.12 FIELD MEASUREMENTS

- A. Although care has been taken to ensure their accuracy, the dimensions shown for existing items and structures are not guaranteed. It is the responsibility of the Contractor to verify these dimensions in the field before fabricating any construction component. No claims for extra payment due to incorrect dimensions will be considered by the Owner.

1.13 WORK SEQUENCE

- A. The Contractor shall commence work and shall maintain a sufficient work force at all times to ensure satisfactory completion within allotted construction time period and following the approved schedule.

1.14 CONTRACTOR USE OF PREMISES

- A. Use of the Site: Limit use of the premises to work in areas indicated on approved schedule. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
- B. Owner Occupancy: Allow for Owner occupancy and use by the public.
- C. Driveways and Entrances: Keep driveways and entrances serving the Gallagher Intermodal Transportation Center clear and available to the Owner, the Owner's employees, and emergency vehicles at all times as indicated in documents. Contractor staging and laydown areas shall be as indicated in the drawings including protections for the public.
- D. Schedule and perform work to afford minimum of interruption to normal and continuous operation of utility systems. The Contractor shall submit to the Owner and Engineer for approval, proposed schedule for performing work; including construction of new utilities, rerouting of existing utilities and final connection of new work to existing work. Schedule shall indicate shutdown time required for each operation.
- E. The Contractor shall notify the Owner in writing 72 hrs in advance of the proposed time for shutting down or interrupting any utilities, services, or facilities that may affect the operation of other buildings, services or facilities of the LRTA.

- F. Coordinate with Owner and Engineer any work in connection with adjacent driveways, walks, or other facilities that would prevent access thereto or interrupt, restrict, or otherwise infringe upon the Owner's use thereof.
- G. The Contractor shall be aware of the sensitivity of the neighborhood tenants and organizations to noise, dust, debris, and site maintenance and take appropriate precautions to avoid conflict.
- H. Damage to existing work, if caused by the Contractor's operations under this Contract, shall be repaired at the Contractor's expense.
- I. An existing conditions survey shall be conducted, with the Engineer, and the Owner, at which existing conditions will be documented by the Contractor. Documentation will be submitted to the Owner.
- J. Walks, paved or landscaped areas over which temporary driveways cross, laydown areas are constructed, or scaffolding is erected, shall upon completion of the work, be restored to their original condition.
- K. The Contractor can gain access to the premises during the hours specified below. In addition, the Contractor and his personnel will limit themselves only within the working premises during working hours. Contractor shall have no use of public restrooms. If work needs to be scheduled during times other than those listed below, Contractor shall inform the Owner one week prior to work.
 - 1. Deliveries: 6:30 a.m. to 4:00 p.m.
 - 2. General Access: 6:30 a.m. to 4:00 p.m.
- L. Confine operations at the site to areas permitted by:
 - 1. Laws,
 - 2. Ordinances,
 - 3. Permits,
 - 4. Contract Documents,
 - 5. Owner's Regulations.
- M. All available existing utilities adjacent to the construction site will be available for use during construction unless indicated otherwise. These utilities would include water, sewer, and electricity. Temporary connections to these utilities, all metering, transformers, removal, usage, and their associated costs will be the responsibility of the Contractor.

1.15 REFERENCE STANDARDS

- A. For products specified by association or trade standards, comply with requirements for the standard, except where more rigid requirements are specified or are required by codes. Refer to Section 01 42 00 – REFERENCES.
- B. Where reference is made in the Contractual Documents to Publications and Standards issued by Associations or Societies, the intent shall be understood to specify the current edition of such Publications or Standards (including tentative revision) in effect on the date of the contract advertisement notwithstanding any reference to a particular date.

1.16 PROJECT MEETINGS

- A. Project progress meetings shall be held on a weekly basis or as scheduled by the LRTA's Project Manager.
- B. As a prerequisite for monthly payments, ordering schedules, shop drawing schedules, and coordination meeting schedules shall be prepared and maintained by the Contractor and shall be revised and updated on a monthly basis, and a copy shall be submitted to the Project Manager, Owner and Engineer.
- C. Scheduling shall be discussed with all concerned parties, and methods shall be presented by the Contractor which shall reflect the completion not being deferred, at no additional cost to the Owner.
- D. Minutes of the project progress meetings will be prepared by the LRTA's Project Manager and will be distributed in a timely manner to all attendees.

1.17 PERMITS, INSPECTION AND TESTING REQUIRED BY GOVERNING AUTHORITIES

- A. If the Contract Documents, laws, ordinances, rules, regulations, or orders of any public authority having any jurisdiction require any portion of the Work to be inspected, tested, or approved, the Contractor shall give the Engineer, and such Authority timely notice of its readiness so that the Engineer may observe such inspecting, testing, or approval.
- B. Prior to the start of construction, the 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.
- C. The Contractor shall apply for Building Permits within 14 days after receipt of executed contract. Contractor must progress work such as to not cause suspension of permit. Any costs resulting from suspension of permit relation to Contractor's actions or inaction to be borne by Contractor, including upgrades mandated by code changes.
- D. Provide copies of all permits to the Owner and Engineer

1.18 DEBRIS REMOVAL

- A. Debris shall not be permitted to accumulate and the work shall at all times be kept satisfactorily clear on a daily basis to permit access to the site and areas surrounding the work zones.
- B. The Contractor shall removal all non-hazardous debris from the site of the work and shall legally dispose of it at any private or public disposal facility as the contractor may choose. The Contractor shall make all arrangements, obtain all permits and required approvals and bear all costs for such disposal. Garbage to be removed daily.

1.19 PROTECTION OF PROPERTY AND THE PUBLIC

- A. Construct all fences, barricades, and protective facilities required for the protection of the public in accordance with city and state regulations. Furnish and install all signs, light reflectors, and all such protection facilities as may be required.
- B. The Contractor shall hold the Owner and the Engineer harmless from all claims arising from the use of public streets, sidewalks, and adjoining premises for construction purposes.
- C. Keep all access roads and walks clear of debris, materials, and equipment during demolition operation. Repair streets, drives, curbs, sidewalks, poles, and the like where disturbed by the operation and leave them in good condition after completion of the work as before operation started.
- D. Protect everything on the premises from injury by water, frost, wind, fire, accident or other cause, and any interference.
- E. Pay fees for police details and fire watches required by local Authorities.

1.20 DAMAGE RESPONSIBILITY

- A. The Contractor shall repair, at no cost to the Owner, any damage to building elements, site appurtenances, landscaping, utilities, etc., caused during demolition operation and work of this Contract.

1.21 SAFETY REGULATIONS

- A. This project is subject to compliance with Public Law 91-596 "Occupational Safety and Health Act," latest edition (OSHA 29 CFR 1926), with respect to all rules and regulations pertaining to construction, including Volume 36, numbers 75 and 105, of the Federal Register, as amended, and as published by the U.S. Department of Labor.
- B. Submit the name of the Contractor's safety officer to the Owner. Submit copies of safety reports to the Owner monthly.
- C. All accident reports are to be transmitted to the Owner within 24 hrs of occurrence.

1.22 OSHA SAFETY AND HEALTH COURSE DOCUMENTATION

- 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 of contractors' and subcontractors' on-site employees at all levels, whether stationed in the trailer or working in the field. Unless the Massachusetts Attorney General's office indicates otherwise, 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 compiled by the Contractor and Subcontractors as part of their certified payrolls, and the Contractor shall create and maintain a copy of the documentation on site at all times. On-site documentation shall be filed in alphabetical order and immediately available to Owner and OSHA inspectors. Fines imposed for noncompliance shall be promptly paid by the Contractor at no additional expense to the Owner. Delays in the progress of the Work caused by such noncompliance will not be acceptable as the basis for an extension of contract time or change order request.

1.23 VISITORS' LOG AND OTHER DATA

- A. The Contractor shall maintain a visitors' log at the workplace and require all persons visiting the site to sign the log. The log should provide space for the following information:
 - 1. Name
 - 2. Person or organization represented
 - 3. Date
 - 4. Time
 - 5. Purpose of visit
 - 6. Acknowledgement certificate
- B. The Contractor shall maintain a daily job log containing entries describing the progress and location of the work, any special conditions encountered, records of testing, amount of material removed, and other pertinent data.

1.24 ASBESTOS AND HAZARDOUS MATERIALS DISCOVERY

- A. If unanticipated asbestos-containing materials or other hazardous materials not included in Contract are discovered at any time during the course of work, the Contractor shall cease work in the affected areas only and continue work in other areas, at the same time notify Owner and the Engineer of such discovery. Do not proceed with work in such affected areas until written instructions are received. If removal is required, payment will be made in accordance with the contract unit prices bid for each respective material. In the absence of unit prices, costs shall be negotiated or otherwise established prior to commencement of removal, in accordance with provisions of the Contract.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 10 60

REGULATORY REQUIREMENTS

PART 1 – GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to the Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Division 1 Specifications which are hereby made a part of this section.

1.02 REQUIREMENTS

- A. General Laws
- B. Air Pollution Control
- C. Permits and Licenses
- D. Motor Vehicles
- E. Public Safety and Convenience

1.03 GENERAL LAWS

- A. The Contractor shall keep himself fully informed of all state and national laws and municipal ordinances and regulations in any manner affecting those engaged or employed in the work, or the materials used in the work, or in any way affecting the conduct of the work, and of all orders and decrees of bodies and tribunals having any jurisdiction or authority over the same. If any discrepancy or inconsistency is discovered in the contract for the work in relation to any law, ordinance, regulation, order or decree, the Contractor shall forthwith report the same to the Engineer in writing. He shall at all times observe and comply with and shall cause all his agents and employees to observe and comply with all existing laws, ordinances, regulations, orders and decrees.
- B. It shall be the responsibility of the Contractor to observe and practice to the fullest extent practicable controls, procedures and methods lending themselves to protection of the human and natural environment.
- C. The Contractor shall at all times observe and comply with and shall cause all his agents and employees to observe and comply with all existing laws, ordinances, regulation, orders and decrees especially in their relationship to the protection of the total environment.

1.04 APPLICABLE CODES AND REGULATIONS

- A. All work shall be performed in accordance with all applicable codes including but not limited to:
 - 1. Massachusetts State Building code, 9th edition

2. International Building Code (IBC) 2015
3. National Fire Protection Association: NFPA 101 – Life Safety Code
4. Commonwealth of Massachusetts Regulation 521 CMR: Architectural Access Board
5. United States Occupational Safety and Health Administration (OSHA)
6. United States Department of Justice, No. 28 CFR Part 367 – AMERICAN WITH DISABILITIES ACT (Public Law 101-336)

1.05 WAGE RATE COMPLIANCE

- A. The Contractor is responsible to ensure that the rate per hour to be paid to workers employed on the work shall not be less than the approved wage rates applicable to this project. A legible copy of the approved rates shall be posted on site and shall be clearly visible for review by all workers.

1.06 AIR POLLUTION CONTROL

- A. The Contractor shall comply with the provisions of Chapter 111, as amended, of the General Laws of the Commonwealth of Massachusetts pertaining to and establishing the Air Pollution Control Districts in the Commonwealth. The burning of trees, brush and other construction debris will not be permitted on the project site. The Contractor shall provide other satisfactory, approved methods of disposal without additional compensation.

1.07 PERMITS AND LICENSES

- A. The Contractor shall procure all required permits and licenses and give all notices necessary and incidental to the due and lawful prosecution of the work. Per MGL Chapter 161B, Section 13, The LRTA is exempt from taxes, excise or assessment and is not required to pay any fee or charge for any permit or licenses issued to it by the commonwealth or by any department, board or officer of such political subdivision. Copies of all required permits and licenses shall be filed with the Owner and the Engineer prior to beginning of work.

1.08 MOTOR VEHICLES

- A. No vehicle shall be driven on any way, as defined in Section 1 of Chapter 90 of the General Laws, unless such vehicle is constructed or loaded so as to prevent any of its load from dropping, sifting, leaking or otherwise escaping therefrom, except that sand may be dropped for purposes of securing traction or water or other substances may be sprinkled on such a way in cleaning or maintaining the same (General Laws, Chapter 85, Section 30 as amended).

1.09 PUBLIC SAFETY AND CONVENIENCE

- A. The Contractor shall at all times be responsible for the protection of the work and shall take all precautions for preventing injuries to persons or damage to property on or about the project.
- B. Trenches shall not be opened in traveled ways until all materials and equipment required for the work are at the site and available for immediate use. When work is not in progress, trenches in areas subject to public travel shall be covered with steel plates capable of safely sustaining a 36.5 ton truck load with impact. The work at each trench shall be practically continuous, with the placing on conduit and piping, backfilling and patching of the surface closely following each preceding operation.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01 3100

PROJECT COORDINATION

PART 1 – GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to the Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Division 1 Specifications which are hereby made a part of this section.

1.02 SUMMARY

- A. Description
 - 1. Coordinate scheduling, submittals and work of the various trades and elements of the work to ensure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items to be installed later.
 - 2. Coordinate sequence of the work to accommodate continuous occupancy by Owner.
- B. Meetings: In addition to progress meetings, hold coordination meetings and preinstallation conferences with personnel and subcontractors to ensure coordination of the work.
- C. Coordination of Submittals:
 - 1. Schedule and coordinate submittals.
 - 2. Coordinate work of various trades having interdependent responsibilities for installing, connecting to and placing in service such equipment.
 - 3. Coordinate requests for substitution to ensure compatibility of space, of operating elements and effect on work of other trades.

1.03 DESCRIPTION OF WORK

- A. Minimum administrative and supervisory requirements necessary for coordination of work on the project include but are not necessarily limited to the following:
 - 1. Surveys and records or reports
 - 2. Limitations for use of site
 - 3. Construction staging
 - 4. Cleaning and protection

1.04 ENGINEERING / LAYOUT OF WORK

- A. The Contractor, at his own expense, shall furnish all engineering services required for establishing grades, lines, levels, dimensions and reference points for all trades; shall be responsible for maintaining benchmarks and other survey marks, and shall replace, as directed, any benchmarks which have been distributed or destroyed.
- B. Drawings shall not be scaled to determine dimensions.
- C. Advise entities performing work of marked lines and levels provided for their use.
- D. The Contractor shall compare all grades, line, levels and dimensions as shown on the Drawings and actual site conditions and shall immediately report to the Engineer any inconsistencies and discrepancies for review and clarification prior to proceeding with the work. The Contractor will be liable for all costs associated with the removal and replacement of any work done by the Contractor knowing that inconsistencies or discrepancies exist and not reporting such issues to the Engineer.

1.05 LIMITATIONS ON USE OF SITE

- A. General: Limitations on site usage as well as specific requirements that impact site utilization are indicated by other Contract Documents. In addition to these limitations and requirements, administer allocation of available space equitably among entities needing both access and space so as to produce the best overall efficiency in performance of the total work of the project. Schedule deliveries so as to minimize space and time requirements for storage of materials and equipment on site.
- B. Burial of Waste Materials: Do not dispose of organic and hazardous materials on site, either by burial or by burning.

1.06 PROTECTION OF PROPERTY

- A. Existing Surfaces and Facilities
 - 1. Take positive action to protect all existing surfaces and facilities from any damage resulting from construction operations unless modifications to the surface or facilities are required as part of the contract. Protect existing building and keep it weather tight.
 - 2. Protect all paving, landscaping and utility facilities from damage caused by mobile and stationary equipment, including vehicles delivering materials to the site.
 - 3. Protect all finished surfaces through which materials are handled against any possible damage resulting from the conduct of the work by all trades.

B. Utilities

1. Protect and maintain all existing utilities and cause no interruption of service. These utilities include but are not limited to gas, electric, telephone, drainage, sanitary sewer and water.

C. Repair of Damages

1. As soon as possible after discovery of any damage by construction to surfaces of facilities which are to remain in place, repair such damage. All repairs shall result in conditions equal in strength to the previous conditions. All repaired surfaces shall be identical in color and texture to the adjacent existing materials, except that where materials cannot be matched, refinish the surrounding area to give a uniform appearance acceptable to the Owner and Engineer.

1.07 FIRE PROTECTION

- A. Take adequate precautions against fire throughout all operations. Flammable material shall be kept at an absolute minimum and shall be properly handled and stored. Except as otherwise provided herein, do not permit fires to be built.
- B. Construction practices, including cutting and welding and protection during construction, shall be in accordance with the published standards of the Factory Mutual Insurance Association, the National Fire Protection Association and the City of Lowell's Fire Department. Provide approved non-freeze portable fire extinguishers distributed about the project.
- C. Store gasoline and other flammable liquids in Underwriters Laboratories-listed safety containers in conformance to the National Board of Fire Underwriters' recommendations.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

3.01 CLEANING AND PROTECTION

- A. General: During handling and installation of work at the project site, clean and protect work in progress and adjoining work as the basis of continuous maintenance. Apply protective covering on installed work where it is required to ensure freedom from damage or deterioration at time of substantial completion.
- B. Clean and perform maintenance on installed work as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

C. Limiting Exposures of Work: To the extent possible through reasonable control and protection methods, supervise performance of the work in such a manner and by such means as will ensure that none of the work, whether completed or in progress, will be subjected to harmful, dangerous, damaging or otherwise deleterious exposure during the construction period. Such exposure includes, where applicable, but not by way of limitation, the following:

1. Excessive static or dynamic loading
2. Excessive internal or external pressures
3. Excessively high or low temperatures
4. Thermal shock
5. Excessively high or low humidity
6. Air contamination or pollution
7. Water or ice
8. Solvents
9. Chemicals
10. Light
11. Radiation
12. Puncture
13. Abrasion
14. Heavy traffic
15. Soiling
16. Bacteria
17. Insect infestation
18. Combustion
19. Electrical current
20. High speed operation, improper lubrication, unusual wear or other misuse
21. Incompatible interface
22. Destructive testing
23. Misalignment
24. Excessive weathering
25. Unprotected weathering
26. Improper shipping or handling
27. Theft
28. Vandalism

END OF SECTION

SECTION 01 3200

SCHEDULES, REPORTS, PAYMENTS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Division 1 Specifications which are hereby made a part of this section.

1.2 COORDINATION

- A. Coordinate both the listing and timing of reports and activities required by provisions of this section and other sections, so as to provide consistency and logical coordination between the reports. Maintain coordination and correlation between separate reports by updating at monthly or shorter time intervals. Make appropriate distribution of each report and updated report to all parties involved in the work including the Engineer and Owner. In particular, provide close coordination of the progress schedule, schedule of values, listing of subcontracts, schedule of submittals, progress reports, and payment requests.

1.3 PRELIMINARY PROGRESS SCHEDULE

- A. Bar-Chart Schedule: Submit a bar-chart type progress schedule not more than seven (7) days after execution of the Contract. On the schedule, indicate time bar for each major category or unit of work to be performed at the site, properly sequenced and coordinated with other elements of work. Provide plan indicating what areas will be unavailable for Owner occupancy correlated with this schedule. Show completion of the work sufficiently in advance of the date established for substantial completion of the work. The Owner will review the schedule.
 - 1. Superimpose an S-curve during the Contract time, with a column of cost figured in left-hand margin ranging from zero to Contract Sum.
 - 2. Submittal Tabulation: With the bar-chart submittal, submit a tabulation, by date, of the submittals required during the first 30 days of Construction Time. This tabulation shall include both those submittals required during the initial 30 days of construction to maintain the orderly progression of the work, and those submittals required early because of long lead time for manufacture or fabrication. At the Contractor's option, submittal dates may be shown on the bar-chart schedule, in lieu of being tabulated.

1.4 FULLY-DEVELOPED PROGRESS SCHEDULE

- A. Bar-Chart Schedule: Based on preliminary development of the progress schedule and on whatever updating and feedback may have occurred during project start-up, secure critical time commitments for performing major elements of the work. Within fourteen (14) days of Contract Execution, submit a comprehensive bar-chart type progress schedule indicating, by stage-coded symbols, a time bar for each major category or unit of work which are, nevertheless, involved in overall sequencing of the work. Arrange schedule to show graphically the major sequences of work necessary for the completion of related elements of work. Arrange the schedule to show how substantial completion is scheduled to allow for Engineer's procedure for certification of substantial completion. Prepare and maintain the schedule on either a sheet of sufficient width (or else a series of sheets) to show the required data clearly for the entire Construction Time. Prepare the schedule on sheets of stable transparency, or other reproducible material, to permit reproduction for the required distribution.
1. Phasing: Arrange schedule with notation to show how sequence of work is affected by requirements for phased completion, coordination with existing work, limitations of continued occupancies, non-interruptible services, site restrictions, provisions for future work, seasonal variations, environmental control, and similar provisions of total project. Refer to other sections of Division 1, General Conditions, and other contract documents for requirements.
 2. With each bar-chart submission, provide annotated plan showing areas not available for Owner Occupancy correlated with dates on schedule.
- B. Cost Correlation: Immediately below the date line at the heading of chart, provide a two-item cost correlation line, indicating both "precalculated" and "actual" costs. This cost correlation line shall show dollar volume of work performed as of same dates used for preparation of payment requests. Refer to subsequent article for cost reporting and payment procedures. Insofar as it is practical to do so, use the same units of work in progress schedule as indicated in the "schedule of values" required herein.
1. Superimpose an S-curve on the schedule (only first sheet for multiple sheet schedule) to show the "precalculated" dollar volume against time at any point during Contract Time. Provide a double column of figures in the left hand margin; one column shall indicate a range from zero dollars to the Contract Sum, the other column shall indicate a percentage from zero to 100 percent. As the work progresses and on each data used in payment requests, plot a second S-curve showing actual dollar volume of work performed.
- C. Distribution: Following the initial submittal to and response by the Engineer and Owner, print and distribute progress schedules to Engineer, Owner, separate contractors, the principal subcontractors and suppliers or fabricators, and others with a need-to-know schedule-compliance requirement. Post copies in project meeting room and temporary field offices. When revisions are made, distribute updated issues to the same entities and post updated issues in the same locations. Delete entities from distribution when they have completed their assigned work and are no longer involved in performance of schedule.

1.5 PROGRESS MEETINGS, REPORTING

- A. General: In addition to specific coordination and pre-installation meetings for each element of work and other regular project meetings held for other purposes, hold general progress meetings every week with time coordinated with preparation of payment request. Require each entity then involved in planning, coordination, or performance of work to be properly represented at each meeting. Review each entity's present and future needs including interface requirements, time, sequences, deliveries, access, site utilization, temporary facilities and services, hours of work, hazards and risks, housekeeping, change orders, and documentation of information for payment requests. Discuss whether each element of current work is ahead of schedule, on time, or behind schedule in relation with updated progress schedule. Determine how behind-schedule work will be expedited and secure commitments from entities involved in doing so. Discuss whether schedule revisions are required to ensure that current work and subsequent work will be completed within Contract Time. Review everything of significance which could affect progress of the work.
1. Initial Progress Meetings: Schedule initial progress meeting for a date not more than seven (7) days after execution of the Contract. Use it as an organizational meeting, and review responsibilities and personnel assignments.
 2. Reporting: Within three (3) days after each progress meeting date, LRTA's Project Manager will distribute copies of minutes of the meeting to each entity present, to others who should have been present, and to the Owner. Minutes will include a brief summary (in narrative form) of progress of the work since previous meeting and report.
 3. Scheduling Updating: Immediately following each progress meeting, where revisions to progress schedule have been made or recognized, revise progress schedule. Reissue revised schedule concurrently with report of each meeting.
- B. Daily Reports: Prepare a daily report, recording the following information concerning events at the site; and submit duplicate copies to Engineer and Owner at regular intervals not exceeding the weekly intervals:
1. List of subcontractors at the site
 2. List of separate contractors at the site
 3. Approximate count of personnel at the site
 4. High/low temperatures, general weather conditions
 5. Accidents (refer to accident reports)
 6. Meetings and significant decisions
 7. Unusual events (refer to special reports)
 8. Stoppages, delays, shortages, losses
 9. Meter reading and similar recordings
 10. Emergency procedures, field orders
 11. Orders/requests by governing authorities
 12. Change orders received, implemented
 13. Services connected, disconnected
 14. Equipment or system tests and start-ups
 15. Partial completions, occupancies
 16. Substantial completions authorized

1.6 SCHEDULE OF VALUES

- A. General: Prepare a schedule of values, in conjunction with the preparation of the progress schedules. Correlate preparation of schedule of values and progress schedule. Correlate line items with other administrative schedules and forms required for the work, including the progress schedule, payment request form, listing of subcontractors, schedule of alternates, listing of products and principal suppliers and fabricators, and schedule of submittals. Provide breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of payment requests and progress reports. Break down principal subcontract amounts into several line items. Round off to nearest whole dollar, but with the total equal to Contract Sum.
1. Sub-Schedules: Where the work is separated into phases which require separately phased payments to Contractor, provide sub-schedules showing of values correlated with each phase of payment.
 2. Material/Fabrication Values: For each unit of work where payment requests will be made on account of materials or equipment purchases, fabricated, delivered, but not yet installed, show "initial value" for payment request and "value added" for subsequent stage or stages of completion on that unit of work.
 3. Time Coordination: In coordination of initial submittals and other administrative "start-up" activities, submit the schedule of values to the Project Manager and Engineer for review and approval at the earliest feasible date, but in no case less than seven (7) days before the first Application for Payment is submitted.
 4. Listing: Arrange the schedule with columns to indicate the generic name of items, related specification sections, subcontractor, the supplier, manufacturer or fabricator, change orders (numbers) which have affected the value, the dollar value of the item, and the percentage of the Contract Sum to the nearest one-hundredth percent and adjusted to total 100 percent.
 5. Margins of Cost: Show line items of indirect costs and margins on actual costs only to extent such items will be individually listed in payment requests. In general, each item in the schedule of values and in payment requests shall be established to be complete with its total expenses and proportionate share of the general overhead and profit margin. Except as otherwise indicated, those major cost items that are not directly the cost of actual work-in-place, such as distinct temporary facilities, may be either shown as line items in the schedule of values or may be distributed as general overhead expenses, at Contractor's option.
 6. Scheduling Update: Update and resubmit schedule of values when change orders affect listing and when actual performance of the work involves necessary changes of substance to the values previously listed. List each change order as new line items to the schedule of values.

1.7 PAYMENT REQUESTS

- A. General: Except as otherwise indicated, the progress payment is to be regular. Each application must be consistent with previous applications and payments. Certain applications for payment, such as the initial applications, the applications at substantial completion, and the final payment applications involve additional requirements.
- B. Payment Application Times: the “date” for each progress payment is as indicated in the General Conditions. The period of construction work covered by each payment request is the period indicated in the General Conditions.
- C. Payment Application Forms: The LRTA will provide its form of Payment Application form to the selected Contractor prior to Notice to Proceed.
- D. Application Preparation: Except as otherwise indicated, complete every entry provided for on the forms as provided, including notarization and execution by authorized persons. Incomplete applications will be returned by the Owner without action. Entries must match current data of schedule of values and progress schedule and report. Listing must include amounts of change orders issued prior to last day of the “period of construction” covered by application. Contractor’s Affidavit of Release of Liens shall be submitted by the General Contractor with his applications for each sub-contractor who performed work and form which payment was made by the Owner in the preceding Applications for Payment. Under no circumstances will any payment be made without certified payrolls from the Contractor and all Subcontractors.
- E. Initial Payment Application: The principal administrative actions and submittals which must precede or coincide with the submittal of first payment applications can be summarized as follows, but not necessarily by way of limitation:
 - 1. List of subcontractors and principal suppliers and fabricators
 - 2. Schedule of values
 - 3. Progress schedule (preliminary if not final)
 - 4. Schedule of principal products
 - 5. Schedule of unit prices
 - 6. List of Contractor’s staff assignments and principal consultants
 - 7. Copies of acquired permits and similar authorizations and licenses from governing authorities for current performance of the work.
 - 8. Initial progress report, including report of preconstruction meeting.
- F. Application at Time of Substantial Completion: Following issuance of Engineer’s final “Certificate of Substantial Completion”, and also in part as applicable to prior certificates on portions of completed work as designated, a “special” payment application may be prepared and submitted by Contractor. The principal administrative actions and submittals which must precede or coincide with such special applications can be summarized as follows, but not necessarily by way of limitation:

1. Occupancy permits and similar approvals or certifications by governing authorities and franchised services, assuring Owner's full access and use of completed work.
 2. Warranties (guarantees), maintenance agreements, and similar provisions of contract documents.
 3. Test/adjust/balance records, maintenance instructions, meter readings, start-up performance reports, and similar change-over information germane to Owner's occupancy, use, operation and maintenance of complete work.
 4. Final cleaning of the work
 5. Application for reduction (if any) of retainage and consent of surety.
 6. Advice to Owner on coordination of shifting insurance coverages, including proof of extended coverages as required.
 7. Final progress photographs, where required
 8. List of Contractor's incomplete work, recognized as exceptions to Engineer's certification of substantial completion.
- G. Final Payment Application: The administrative actions and submittals which must precede or coincide with submittal of contractor's final payment application can be summarized as follows, but no necessarily by way of limitation:
1. Completion of project closeout requirements
 2. Completion of items specified for completion beyond time of substantial completion (regardless of whether special payment application was previously made).
 3. Assurance, satisfactory to Owner, that unsettled claims will be settled and that work not actually completed and accepted will be completed without undue delay.
 4. Transmittal of required project construction records to Owner.
 5. Transmittal of required DBE utilization forms to the Owner
 6. Proof, satisfactory to Owner, that taxes, fees, and similar obligations of Contractor have been paid.
 7. Removal of temporary facilities, services, surplus materials, rubbish, and similar elements.
 8. Change-over of door locks and other Contractor's access provisions to Owner's property
 9. Consent of surety for final payment.

- H. Application Transmittal: Submit three executed copies of each payment application. Transmit to LRTA Project Manager and Owner by means ensuring receipt within 24 hours.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 3300

SUBMITTAL REQUIREMENTS

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to the Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Division 1 Specifications which are hereby made a part of this section.

1.02 SUMMARY

- A. Work Included:

1. Wherever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined by manufacturer's name and catalog number, reference to recognized industry and government standards, or description of required attributes and performance.
2. To ensure that the specified products are furnished and installed in accordance with design intent, procedures have been established for advance submittal of design data and for their review by the Engineer.
3. Make all submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements.
4. All products proposed for use, including those specified by required attributes and performance, shall require approval by the Engineer before being incorporated into the work.

- B. Related Work Specified Elsewhere: Individual requirements for submittals are described in pertinent other Sections of these Specifications.

- C. Submit two (2) copies of all documents required to be submitted to the Engineer, unless noted otherwise. Engineer Contact Information:

Louis J. Free, AIA, NCARB
Project Manager, Architect of Record
AECOM
1 Federal Street, 8th Floor
Boston, Massachusetts 02110
D Boston: 617-994-6265
louis.free@aecom.com

D Rocky Hill: 860-263-5824

LRTA Project Manager
c/o Lowell Regional Transit Authority
115 Thorndike Street
Lowell, MA 01852
Phone: 1-978-459-0164

1.2 SUBMITTAL SCHEDULE

- A. Within fourteen (14) calendar days after execution of the Contract and before any items are submitted for review, compile a complete and comprehensive schedule for all submittals anticipated to be made during progress of the work and submit two (2) copies to the Engineer. The schedule of submittals must be coordinated with the Contractor's construction schedule. Include a list of each type of items for which Shop Drawings, Product Data, Samples, Certificates of Compliance, guarantees, mock-ups, or other types of submittals are required. Indicate whether proposed materials, equipment, and other items are as specified or will be submitted as an "or equal". Upon review and approval by the Engineer, the Contractor will be required to adhere to the schedule except when specifically otherwise permitted. Coordinate the schedule with all necessary subcontractors and material suppliers to ensure their understanding of the importance of adhering to the approved schedule and their ability to so adhere.
- B. Revise and update the schedule on a monthly basis as necessary to reflect conditions and sequences. Promptly submit revised schedule to the Engineer for review and comment.

1.3 TIMING OF SUBMITTALS

- A. General: Make all submittals far enough in advance of scheduled dates for installation to provide all time required for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery.
- B. Engineer's Review Time: In scheduling, allow at least 14 calendar days for review by the Engineer following his receipt of the submittal. The Engineer will stamp all submittals 'Received', and the date so stamped shall be the official receipt date.
- C. Delays: Delays caused by tardiness in receipt of submittals will not be an acceptable basis for extension of the Contract Completion Date.

1.4 SHOP DRAWINGS, PRODUCTS DATA, AND SAMPLES

- A. Shop Drawings:
 - 1. Original drawings shall be prepared by General Contractor, Subcontractor, Supplier, or Distributor that illustrate some portion of the Work, showing fabrication, layout, setting, or erection of details.
 - a. Shop drawings shall be prepared by a qualified detailer.

- b. Details shall be identified by reference to sheet and detail numbers indicated on Contract Drawings.
- c. Maximum sheet size shall be 30 in. by 42 in.
- d. Submit with the required number of opaque prints specified herein.

B. Product Data:

- 1. Manufacturers' catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data. Provide manufacturer's catalogue sheet, specification for each product, and other pertinent data as required under the individual specification.
 - a. Modify product data submittals to delete information that is not applicable to the project.
 - b. Supplement standard information to provide additional information applicable to the project.
 - c. Clearly mark each copy to identify pertinent materials, products, or models.
 - d. Show dimensions and clearances required.
 - e. Show performance characteristics and capacities.
 - f. Show wiring diagrams and controls.
- 2. All such data shall be specific and identification of material or equipment submitted shall be clearly made in ink. Data of general nature will not be accepted.
- 3. Product Data shall be accompanied by transmittal notice. The Contractor's stamp of approval shall appear on the printed information itself.

C. Samples:

- 1. Physical samples shall illustrate materials, equipment or workmanship, and shall establish standards by which work is judged. After review and approval, samples may be used in construction of project if not retained for comparison
 - a. Office samples of sufficient size and quantity shall clearly illustrate the following:
 - 1) Functional characteristics of product or material, with integrally related parts and attachment devices.
 - 2) Full range of color samples.
 - 3) After review and approval by Engineer, samples may be used in construction of project if not retained for comparison.

- b. Field Samples and Mockups:
 - 1) Erect at project site at locations acceptable to the Engineer.
 - 2) Construct each sample of mockup complete, including work of all trades required in finished work.
- 2. Unless otherwise specified in the individual Section, the Contractor shall submit two labeled specimens of each Sample.
- 3. Samples shall be of adequate size to permit proper evaluation of material. Where variations in color or in other characteristics are to be expected, samples shall show the maximum range of variation. Materials exceeding the variation of the approved samples will not be approved on the Work.
- 4. Samples that can be conveniently mailed shall be sent directly to the Engineer, accompanied by transmittal notice. On the transmittal notice the Contractor shall stamp his approval of samples submitted.
- 5. All other samples shall be delivered at the field office of the Contractor with sample identification tag attached and properly filled in. Transmittal notice of samples so delivered with the Contractor's stamp of approval shall be mailed concurrently to the Engineer to confirm their receipt.
- 6. If sample is rejected by the Engineer, a new sample shall be resubmitted in the manner specified herein above. This procedure shall be repeated until the sample is approved in writing by the Engineer.
- 7. Samples will not be returned unless return is requested at the time of submission. The right is reserved to require submission of samples, whether or not specified in the Specifications, at no additional cost to the Owner.
- D. Mockups: Erect at project site at location acceptable to Project Manager & Engineer, each mockup complete, including work of all trades required in finished work.
- E. Operations and Maintenance Data:
 - 1. Manuals shall be submitted as per the Specification Section 21 13 00- Fire Protection, Section 22 00 00-Plumbing and Section 26 05 10 Electrical.
 - 2. Manuals shall be submitted for each equipment item as follows:
 - a. One copy of sample formats and outline of contents in draft form 30 days to the earliest scheduled equipment delivery to be submitted to the Owner for approval.
 - b. One copy of complete manual in final form on equipment delivery date.
 - c. Five copies of approved manual after the equipment is installed and ready to test.

3. Manuals shall be prepared from the following materials:
 - a. Loose lead, on 60-pound, punched paper
 - b. Hole reinforced with plastic cloth
 - c. Page size, 8-1/2 inches by 11 inches
 - d. Foldout diagrams and illustrations
 - e. Reproducible by dry-copy xerography method
 - f. Oil-, moisture, and wear-resistant plastic covers
4. General Requirements for Manuals:
 - a. Manufacturer's operating manuals giving complete instructions relative to assembly, installation, operation, adjustment, lubrication, maintenance, and complete parts list shall be furnished by the Contractor for every item of machinery and equipment furnished by the Contractor.
 - b. Manuals furnished may be manufacturer's standard publications in regard to size and binding provided they comply with specified requirements relative to quantity and quality of information and data.
 - c. Manuals shall be bound in hard or flexible covers. Illustrations shall be clear, and printed matter, including dimensions, letter on drawings, shall be easily legible. If reduced drawings are incorporated into manuals, original lines and letter shall be made heavier up as necessary to retain their legibility after reduction. Larger drawings may be folded into manuals to page size.
5. Format Manuals as follows:
 - a. Title Page: Include the name and function of the equipment, manufacturer's identification number, and the Project Specifications number and title.
 - b. Table of Contents, in numerical order listing each section and subsection title of the O&M Manual with reference to the page on which each starts and a list of included diagrams and drawings.
 - c. Index, in alphabetical order
 - d. Frontispiece: Recognition illustration of the equipment, including major assemblies and subassemblies, and giving manufacturer's model number and drawing number.
 - e. Operation instructions including step-by-step preparation for starting, operation, shutdown and draining, and emergency requirement.
 - f. Control diagrams, as-installed by the manufacturer.
 - g. Sequence of operation by the control manufacturer.
 - h. Wiring diagrams, as-installed and color coded, of electrical motor controllers, connections, and interlock connections.
 - i. Diagrammatic location, function, and tag numbers of each valve.

- j. Maintenance instructions: include step-by-step procedures for inspection, operation checks, cleaning, lubrication, adjustments, repair, overhaul, disassembly and reassembly of the equipment for proper operation of the equipment. Include list of special tools which are required for maintenance with the maintenance information.
 - k. Possible breakdowns and repairs. Troubleshooting flow charts shall be included for diagnosis of any major system or control.
 - l. Manufacturer's parts list of functional components, control diagrams, and wiring diagrams, giving manufacturer's model number and manufacturer's part number.
 - m. "Long-Lead-Time" spare parts list for spare parts not readily available on the open market or for which it is anticipated ordering and delivery time will exceed 10 days.
 - n. List of nearest local supplier of all equipment part.
 - o. Recommended preventative maintenance schedule for major system components including lubrication schedule indicating type and frequency of lubrication.
 - p. Manufacturer's warranty and guarantee data.
 - q. Spare parts data as follows:
 - 1) Complete List of parts and supplied, with current prices and source of supply.
 - 2) List of additional items recommended by manufacturer to assure efficient operation for period of 120 days.
 - r. Appendix: Include safety precautions, a glossary, and, if available at time of submittal, copies of test reports, and other relevant material not specified to be submitted.
 - s. Delete information on material or equipment not used in the work from the O&M Manual
6. Operating Diagrams
- a. Piping systems, electrical wiring diagrams, fuel oil, lubricating oil, water capacity diagrams, and other diagrams necessary for operation of machinery and equipment shall be furnished and installed where designated by the Engineer.
 - b. No single diagram shall show more than one system, or parts thereof.
 - c. Diagrams shall be reproduced by photographic process to a size not to exceed 18 inches by 24 inches and shall be complete and legible in all respects. Systems shall be subdivided into portions where are operable from location where diagrams are installed, and to provide intelligible information within specified material improvements to moisture and oil, and resistance to abrasion. Other formats which are equal in clarity, sharpness, durability, and permanence will be considered.

F. Manufacturer's Instruction

1. When required in individual Specification Section, submit manufacturer's printed instructions for delivery, storage, assembly, installation, start-up, adjusting and finishing, in quantities specified for product data with two additional copies submitted to the Owner.

G. Certificates of Compliance: Submit certificates of compliance with the associated Shop Drawings, Product Data, and Samples required for the product in quantities specified for certificates of compliance, with two additional copies submitted to the Owner.

H. Field Samples: Provide field samples of finishes at the project as required by individual Specification Section. Install sample complete and finished.

I. Patterns and Colors: Submit accurate color charts and pattern charts to the Engineer for review and selection whenever a choice of color or pattern is available in a specified product, unless the exact color and pattern of a product are indicated in the Contract Documents. Color and pattern charts shall represent the manufacturer's complete standard offerings, except where Specifications limit the offerings by defining a particular series or product type which is normally limited in color and pattern availability. Color and pattern charts shall be submitted in quantities specified with two additional copies submitted to the Owner.

1.5 CONTRACTOR'S RESPONSIBILITIES:

A. Review submittals prior to submission. Verify the following:

1. Field measurements.
2. Field construction criteria.
3. Catalog numbers and similar data.
4. Conformance with Specifications.

B. All shop drawings prepared by subcontractors shall be processed through the Contractor. The Contractor shall check all the shop drawings for conformity with the Contract Documents and particularly for field measurements and proper fit with adjoining work prior to submitting same to the Engineer for approval. Duplication of Contract Documents without field verification is not acceptable. Certification shall appear on each shop drawing stating that the General Contractor has made his/her check. Format and content of the Contractor's certification stamp shall be subject to approval by the Engineer and shall include, but not be limited to:

1. The term "By Others" shall not be used on shop drawings, the Contractor shall state by whom related items are to be furnished and/or installed.
2. The Engineer reserves the right to reject and return to the Contractor, without examination, any shop drawings that have not been previously checked and certified as outlined above, that carry the term "by other" or such vague reference, that are difficult to read, that have arrived by FAX, or that in any way are obviously not in conformity to Contract Requirements.

3. Shop drawings shall show materials, design, dimensions, connections, and other details necessary to ensure that they accurately interpret the Contract Documents and shall also show adjoining work in such detail as required to provide proper connection with same.
 4. The Engineer will check and approve shop drawings only for conformance with the design concept and for compliance with information given in the Contract Documents. Approval of shop drawings by the Engineer will not release the Contractor from his responsibility for furnishing same of proper dimensions, size quantity and quality to effectively perform the work and carry out the requirements and intent of Contract Documents.
 5. Such approval will not relieve the Contractor from responsibility for errors of any sort in the shop drawings, nor for the proper coordination of any submittal with all other work. If the shop drawings deviate, or are intended to deviate, from the Contract Documents, the Contractor shall so advise the Engineer in writing at the time the shop drawings are submitted, stating the difference in value between the Contract requirements and that denoted by said shop drawings.
 6. The Contractor shall assume full liability for delay attributed to insufficient time for delivery and/or installation of material or performance of the work when approval of pertinent shop drawing is withheld due to the failure of the Contractor to submit, revise, or resubmit shop drawings in adequate time to allow the Engineer a reasonable time, not to exceed fourteen days, for normal checking and processing of each submission or resubmission.
- C. Coordinate each submittal with requirements of Contract Documents.
- D. The Contractor's responsibility for errors and omissions in submittals is not relieved by the Engineer's review and approval of submittals, unless Engineer gives tentative written acceptance of specific deviations subject to written concurrence by the Owner.
- E. Notify the Engineer in writing at the time of submission, of deviations in submittals from requirements of Contract Documents or previous submissions.
- F. Work that requires submittals shall not commence unless submitted with Engineer's stamp and initials or signature indicating review and approval.
1. No work shall be started in the shop or on the job, or materials delivered to the site, until pertinent shop drawings have been approved by the Engineer.
- G. After aforesaid review and approval, distribute copies.
- H. Maintain one copy of each approved submittal at the project site.

1.6 SUBSTITUTIONS

A. Approval Required:

1. The Contract is based on the standards of quality established in the Contract Documents.
2. Products proposed for use shall require approval by the Engineer before being incorporated into the work.
3. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved for this work by the Engineer.
4. Unapproved materials incorporated in the work shall be removed and replaced with approved materials at the Contractor's expense.

B. "Or Approved Equal":

1. When submitting proposed substitutions as "Or Equal" refer to Article 9 of the General Conditions and Specification Section 016000 – Product Requirements for required procedures. Include all pertinent data establishing quality, appearance, workmanship, design, capacity, surface finish, and all metal gauges within the construction of the product. Also include related information of proprietary product of manufacturer cited herein as a basis for comparison.

1.7 SUBMISSION REQUIREMENTS:

- A. General: All submittals shall be made to the Engineer's Office except for samples as noted. The quantity and make-up of submittals shall be as established by the Engineer. The Engineer will log and distribute submittals for review by his consultant engineers. The Contractor shall distribute all Civil, Structural, and MEP shop drawings directly to the Engineer.
- B. Make submittals promptly in accordance with approved schedules and in such sequence as to cause no delay in the work.
- C. Submit number of samples specified in each Section of the Specifications.
- D. Submittals shall include the following:
 1. Date and revision dates.
 2. Project title and number.
 3. The names of:
 - a. Designer;
 - b. General Contractor;
 - c. Subcontractor;
 - d. Supplier;
 - e. Manufacturer;
 - f. Separate detailer when pertinent.

4. Identification of product or material.
5. Relation to adjacent structure or materials.
6. Field dimensions clearly identified as such.
7. Specification Section number and specific paragraph under which item is specified.
8. Submission number.
9. Applicable standards, such as ASTM number.
10. A blank space, 5 in. by 4 in., for the Designer's stamp.
11. Contractor's remarks. Identify exceptions or deviations from Contract Documents and reasons for them.
 - a. If shop drawings submitted by the General Contractor indicate a departure from the Contract and the Engineer deems it to be minor adjustment in the interest of Owner (subject to concurrence by the Contractor stating it does not involve a change in Contract Price or extension of time), the Engineer may approve the submission, but the approval shall be subject to Owner review and acceptance of the Engineer's recommendation.
 - b. The approval of Owner shall be inferred to contain in substance the following: The change is so ordered with the understanding that it does not involve any change in the Contract Price or Time and that it is subject generally to all contract stipulations and covenants and is without prejudice to any and all rights of Owner under the Contract.
12. General Contractor's stamp, initialed or signed certifying review and approval of submittal.
13. Any other items as called for by the Engineer, the Owner or required by the manufacturers.
14. The Engineer reserves the right to ask for shop drawings for any or all items on the project, whether or not requested in individual specification sections, at no additional cost to the Owner.

1.8 RESUBMISSION REQUIREMENTS:

- A. Resubmission: Resubmission procedure shall follow the same procedures as the initial submittal with the following exceptions:
- B. Shop Drawings:
 1. Transmittal shall contain the same information as the first transmittal except that the submission number shall change sequentially. The drawing number/description shall be identical as the first transmittal but the date shall be the revised date for that submission.

2. No new material should be included on the same transmittal for the resubmission.
 3. Indicate on drawings any changes which may have been made other than those requested by the Designer.
- C. Product Data and Samples:
1. Submit any new data and samples as required from previous submittal.

1.9 REVIEWS AND DISTRIBUTION OF SUBMISSIONS

- A. The Owner and LRTA Project Manager and any Owner designees will review submittals concurrently with the Engineer and his/her consultant engineers. The Engineer and the Owner shall communicate within the aforesaid review period time frame (fourteen calendar days). The time frame for the Engineer's review will not exceed fourteen calendar days between her/his receipt of submittal and contacting the Owner. After the Engineer's (and his/her consultant engineers) review, distribution shall be as stated herein.
1. If submittal is "APPROVED", "APPROVED AS CORRECTED", "REVIEWED – NO EXCEPTION TAKEN", or "REVIEWED, MAKE CORRECTIONS NOTED", the Engineer shall compose a transmittal indicating the status. The Engineer will then return one copy of the submittal together with the transmittal, shall retain one copy for her/his records, and transmit one copy directly to the Owner. The Contractor shall then distribute said submittals to appropriate subcontractors.
 2. If submittal is "REVISE AND RESUBMIT", "NOT APPROVED", "REVIEWED – REVISE AND RESUBMIT", or "REJECTED", the Engineer shall compose a transmittal indicating the status. The Engineer will then return one copy of the submittal for resubmission, shall retain one copy for her/his records, and transmit one copy directly to the Owner.
 3. The Engineer will process the submission and indicate the appropriate action on the submission and the transmittal. Incomplete or erroneous transmittals will be returned without action.
 4. The Engineer will fill out transmittal in the following sequence:
 - a. Date received from Contractor.
 - b. Date forwarded to LRTA Project Manager.
 - c. Date received from LRTA Project Manager.
 - d. Date returned to Contractor.
 - e. Action taken on submission.
 - f. Distribution, including number of copies distributed and type of material distributed (i.e., print, brochure or sample, etc.).
 - g. Engineer's remarks (note major deviations from the Contract Documents).

B. Engineer's Review Procedure:

1. Stamped APPROVED or REVIEWED – NO EXCEPTIONS TAKEN:
 - a. No corrections or resubmissions required, fabrication may proceed.
2. Stamped APPROVED AS CORRECTED or REVIEWED – MAKE CORRECTIONS NOTED:
 - a. If Contractor complies with noted corrections, fabrication may proceed. Submit corrected print for final review.
 - b. If, for any reason, the Contractor cannot comply with the noted corrections, fabrication shall not proceed and Contractor shall resubmit, following procedures outlined in this Section.
3. Stamped REVISE AND RESUBMIT, REVIEWED – REVISE AND RESUBMIT, NOT APPROVED OR REJECTED:
 - a. Contractor shall revise and resubmit for review. Fabrication shall not proceed.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 4000
QUALITY REQUIREMENTS

PART 1 – GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to the Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Division 1 Specifications which are hereby made a part of this section.

1.02 REQUIREMENTS INCLUDED

- A. Quality assurance.
- B. Contractor's responsibilities.
- C. Examination of substrate.

1.03 RELATED SECTIONS

- A. Section 01 3100 – PROJECT COORDINATION
 - 1. General project management and coordination

1.04 QUALITY CONTROL, GENERAL

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions and workmanship to produce work of high quality as specified.
- B. Comply fully with manufacturer's instructions, including each step in sequence.
- C. Comply with specified standards as a minimum quality for the work except when more stringent tolerances, codes or specified requirements indicate higher standards or more precise workmanship.
- D. Perform work by persons qualified to produce workmanship of specified quality.
- E. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortions or disfigurement. Anchorage devices shall be labeled to allow for visual inspection and verification of type of anchorage device.

1.05 MANUFACTURER'S REPRESENTATIVES

- A. If required; by specific specification sections, manufacturer's representative shall be present at the job site for supervision of work during installation of materials. Such representative shall be present during all aspects of construction to ensure proper installation of all applicable items. Refer to other sections of these specifications for additional requirements.

1.06 EXAMINATION OF SUBSTRATE

- A. Installers of materials, products or equipment shall do the following:
1. Examine base surfaces upon which materials, products or equipment are to be installed.
 2. Examine conditions upon which materials, products or equipment are to be installed.
 3. Where there is any question as to the dryness of a surface, test with a modern moisture-indicating machine.
 4. Notify the Contractor, in writing, with a copy to the Engineer, if conditions are detrimental to proper and timely construction and completion of the work.
- B. Do not proceed with work until unsatisfactory substrate or unacceptable conditions have been corrected. Commencement of installation constitutes acceptance of substrate or base surfaces, and the cost of any corrective work due shall be borne by the installer applying his/her materials, products or equipment thereon.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not used

END OF SECTION

SECTION 01 4200

REFERENCES

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 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract including, but not limited to, the following:
 - 1. Owner (LRTA).
 - 2. Owner's Project Manager (PM)
 - 3. The Engineer (AECOM USA of Massachusetts, Inc.) or the Engineer-of-Record as applicable).
 - 4. The Contractor.
- B. “Reviewed”: When used to convey PM & Engineer’s action on Contractor’s submittals, applications, and requests, “reviewed” is limited to PM & Engineer’s duties and responsibilities as stated in the Conditions of the Contract.
- C. “Directed”: A command or instruction by PM or Engineer. Other terms including “requested,” “authorized,” “selected,” “approved,” “required,” and “permitted” have the same meaning as “directed.”
- D. “Indicated”: Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including “shown,” “noted,” “scheduled,” and “specified” have the same meaning as “indicated.”
- E. “Regulations”: Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. “Furnish”: Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. “Install”: Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

- H. “Provide”: Furnish and install, complete and ready for the intended use.
- I. “Project Site”: Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.03 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more-stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.04 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale Research’s “Encyclopedia of Associations” or in Columbia Books’ “National Trade & Professional Associations of the U.S.”
- B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of current edition of Codes in the Commonwealth of Massachusetts.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 5000

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to the Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Division 1 Specifications which are hereby made a part of this section.

1.02 SUBMITTALS

- A. Temporary Utilities: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. Implementation and Termination Schedule: Within 15 days of the date established for commencement of the Work, submit a schedule indicating implementation and termination of each temporary utility.
- C. Building plan indicating intended location of all construction barriers, enclosures, noise and dust control measures, and scaffolding. Provide intended date for erection and removal of all construction barriers, enclosures, noise and dust control measures, and scaffolding. Coordinate with approved Owner occupancy plan and schedule required under Section 013200 Schedules, Reports, and Payments and Owner restrictions on site usage as indicated on construction documents.

1.03 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
 - 1. Building code requirements
 - 2. Health and safety regulations
 - 3. Utility company regulations
 - 4. Police, fire department and rescue squad rules
 - 5. Environmental protection regulations.
- B. Standards: Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition" and NECA Electrical Design Library "Temporary Electrical Facilities"
 - 1. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electrical service. Install service in compliance with NFPA 70 "National Electric Code"
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.04 PROJECT CONDITIONS

- A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

1.05 TEMPORARY UTILITIES AND SERVICES

- A. The Contractor shall furnish all utilities and services for all work performed in the Contract.
- B. Any temporary pipe lines and connections from permanent service lines either outside or within the site, necessary for the use of the Contractor shall be installed, protected, and maintained at the expense of the Contractor. The Contractor shall arrange to have these services metered and pay for the usage.
- C. The Contractor shall provide an adequate supply of drinking water from approved sources of acceptable quality, satisfactorily cooled, for his employees.

1.06 FIRE PROTECTION

- A. Provide and maintain adequate fire protection during the work.
- B. Gasoline and other flammable liquids shall be stored in and dispensed from UL listed safety containers in conformance with the National Board of Fire Underwriters' recommendations.
- C. Make arrangements for periodic inspection by local fire protection authorities and insurance underwriter inspectors. Cooperate with said authorities and promptly carry out their recommendations.
- D. Tarpaulins used during construction work shall be made of material which is resistant to fire, water, and weather. Tarpaulins shall have UL approval and meet approval of the Lowell Fire Department.
- E. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
- F. Provide and maintain adequate fire protection in the form of fire extinguishers, or other effective means of extinguishing fire, ready for instant use, distributed around the project and in and about temporary inflammable structures during construction of work at the site.

1.07 WEATHER PROTECTION AND ENCLOSURES

- A. The Contractor shall be responsible for the protection of all materials and equipment for the project from the effects of wind, rain, snow, ice, sunlight, heat, and other weather related effects.
- B. Provide temporary, insulated, weather-tight closures of openings in exterior surfaces for providing acceptable working conditions and protection for materials, allowing for heating during construction, and preventing entry of unauthorized persons. Provide doors with self-closing hardware and locks.
- C. All utilities including electric ducts, conduits, telephone lines, sprinklers, and other utilities shall be protected against damage from construction activity. The Contractor shall be responsible for all damage to the utilities from construction and shall repair all such damage at no additional cost to the Owner.

1.08 TEMPORARY ELECTRIC POWER

- A. Electrical energy for temporary light and power will be made available without charge. Make necessary arrangements, through the Owner, for temporary electrical service locations.
- B. The Contractor shall furnish all temporary lighting, extension cords, sockets, motors, and accessories required for his work. The Contractor shall pay for all temporary wiring needed for his field office.
- C. Temporary Electrical Service for the site shall include, but not be limited to:
 - 1. All labor, materials, and equipment necessary to supply temporary power or adequate capacity for Project operations and testing.
 - 2. Transformers and meters, when required by the power company will be furnished and installed by the appropriate power company; pay all costs.
 - 3. Perform all temporary electrical work under the direct supervision of at least one Master Electrician, who shall be present on the Project at all items when electrical work is being performed.
 - 4. Use copper wire only.
- D. Temporary Lighting: Provide temporary lighting with local switching. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.
- E. All relocations of temporary service to meet construction and/or phasing requirements shall be performed at no additional cost to the Owner.

1.09 DUST CONTROL

- A. The Contractor shall provide adequate means for the purpose of preventing dust caused by construction operations from creating a hazard or nuisance, and from entering adjacent occupied areas throughout the period of the construction contract.
- B. The Contractor shall submit a dust control plan to the Engineer for approval.

1.10 NOISE CONTROL

- A. Develop and maintain a noise-abatement program to enforce strict discipline over all personnel to keep noise to a minimum. Comply with the City of Lowell's Noise Ordinance.
- 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.
 - 2. Manage vehicular traffic and scheduling to reduce noise.
 - 3. No heavy equipment may be started or idled before 7:00 a.m.

1.11 FIELD OFFICE

- A. The Contractor shall furnish a field office on the site. The location shall be within the Contractor's Limits of Work indicated on the Drawings.
- B. The Contractor shall maintain the office in a clean and orderly fashion on a daily basis. Provisions shall also be made for a separate conference room and conference table to allow twelve person to be in attendance at one time.

1.12 TEMPORARY TELEPHONE SERVICE

- A. The Contractor shall arrange with local telephone service company, provide and maintain separate direct line telephone service at the construction site for use by contractor employees. This temporary telephone line shall be removed at the completion of the Contract.

1.13 SANITARY FACILITIES

- A. The Contractor shall be responsible for providing and maintaining sufficient sanitary facilities for the use of the Contractor's forces. Such facilities shall be located within the Project limits and shall be maintained in a manner acceptable to the LRTA's Project Manager and the Engineer.
- B. Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.

- C. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.
- D. A maintenance plan of the Sanitary Facilities shall be submitted to the Engineer for approval.

1.14 SITE SECURITY

- A. Maintain the existing perimeter fencing system to fully secure the site for the duration of the Contract. The Contractor is solely responsible for the full security of the work site.

1.15 TEMPORARY WATER

- A. Water for use during construction shall be furnished by the Contractor from the Owner's water system.
- B. Any temporary hoses and pipe lines and connections from the permanent service lines either outside or within the garage, necessary for the use of the Contractor and his subcontractors shall be installed, protected, and maintained at the expense of the Contractor.
- C. Temporary hoses and temporary pipe lines used for transporting water shall not be run unattended or unprotected across parking areas, parking area entrance, walkways, plazas, steps, or inside the garage. Temporary hoses and temporary pipelines shall not be permitted to be installed along, through, or across corridor and occupied rooms or spaces.
- D. Use of the water may be discontinued by the Owner if, in the opinion of the Owner, it is wastefully used.

1.16 ENCLOSURE

- A. Provide temporary enclosure for protection of construction, in progress and completed, where reasonably required to ensure adequate workmanship and protection from weather, exposure, other construction operations, unsatisfactory ambient conditions for the work, and similar activities including enclosure if temporary heat is used. Provide fire-retardant treated lumber and plywood. Provide tarpaulins with UL label and flame spread of 15 or less; provide translucent type (nylon reinforced polyethylene) where day-lighting of enclosed space would be beneficial for workmanship, and reduce use of temporary lighting.
- B. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
- C. Install tarpaulins securely, with incombustible wood framing and other materials.
- D. Close openings through floor or roof decks and horizontal surfaces with load-bearing construction.

1.17 HEATING

- A. Provide temporary heating as required throughout the garage at levels where concrete placement operations are being conducted such that the temperature of the curing concrete does not fall below a 55°F, or higher temperature where reasonably required for the work. Heat with self-contained fuel oil heaters, bearing UL, FM, or other approval labels appropriate for application. Vent fuel-burning heaters, and equip units with individual-space thermostatic controls.

1.18 HOISTING EQUIPMENT AND MACHINERY

- A. Comply with OSHA for all hoists, conveyers, and elevators and maintain the facility in compliance with the law.
- B. 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 Contractor for the use of all subcontractors' 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 Contractor unless specifically accepted in the Contract Documents.
 - 1. A licensed equipment manufacturer's representative shall be present at all times, to witness the erection and dismantling of all hoisting equipment and machinery, whenever such equipment is being erected or dismantled. No such work will be performed without the presence of such representative.
 - 2. Hoisting equipment and machinery erection and dismantling shall be performed only by trained, certified and experienced riggers qualified to perform such work.
 - 3. Copies of such licenses and/or certifications, clearly indicating qualifications, shall be provided to the Owner prior to commencement of such erecting and dismantling work.
- C. Review Drawings for hoisting requirements and openness of traffic access routes to installed destinations of specified equipment and furnishings.

1.19 ACCESS PROVISIONS

- A. Provide ramps, stairs, ladders, and similar temporary access elements as reasonably required to perform the work and facilitate its inspection during installation. Comply with reasonable requests of governing authorities performing inspections.

1.20 SCAFFOLDING AND STAGING

- A. All staging, exterior and interior, required to be over 8 ft in height, shall be furnished and erected by the Contractor 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. Staging shall conform to federal, state, and local requirements.
 - 3. Copies of such certifications, clearly indicating qualifications, shall be provided to the Owner prior to commencement of such erecting and dismantling work.
- B. Any staging that is up to 8 ft in height shall be furnished and erected by the applicable subcontractor.

1.21 WASTE MANAGEMENT PLAN

- A. Develop a waste management plan for Work performed on the Project. Indicate the types of waste material the Project will produce and estimate quantities of each type. Provide detailed information on the on-site waste storage and separate of recyclable rubbish and debris separate categories. Provide information on the destination of each type of waste material and the means to be used to dispose of all waste material.
- B. Collection and Disposal of Waste: The Contractor shall be responsible for the collections of waste from construction area and elsewhere daily as required. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80°F (27°C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.

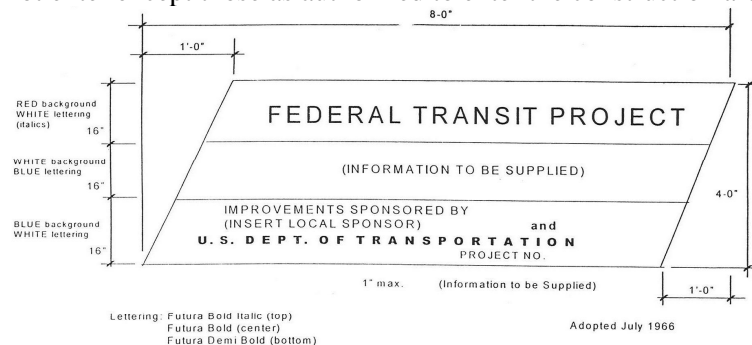
1.22 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures, and similar elements.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 - 2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

- C. Termination and Removal: Unless the Owner requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repairs.
1. Materials and facilities that constitute temporary facilities used during the construction period including, but not limited to, the following:
 - a. Replace air filters and clean inside of ductwork and housing.
 - b. Replace significantly worn parts and parts subject to unusual operating conditions.
 - c. Replace lamps burned out or noticeably dimmed by hours of use.

1.23 PROJECT IDENTIFICATION AND TEMPORARY SIGNS

- A. Prepare project identification signs. Install signs where directed by the Owner to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative-treated wood or steel. Do not permit installation of unauthorized signs.
- B. Project Sign: Provide one (1) project signs as follows:
1. Signboard to be 4'-0" x 8'-0" x 3/4" exterior type, Grade B-B high density concrete form overlay plywood conforming to PS-1.
 2. Signboard framing to be 2"x4" wood studs, 16" on center, pressure-treated with wood preservative.
 3. Provide Project Sign as shown in the Figure on the Following page (sign type B). Place project sign where directed by the Owner. Mount onto the existing perimeter fence; provide all necessary hardware for mounting.
 4. Provide temporary signs around the construction area that will caution and direct the public and employees at the GITC around the construction area. Signs will indicate areas that the public and employees of the GITC should not enter except those as authorized to enter the construction area.



SIGN TYPE B

END OF SECTION

1.24 MAINTENANCE OF ACCESS

- A. The Contractor shall provide and maintain for the duration of his contract, a means of access to, around and within the site, as indicated on the Contract Drawings, for vehicular traffic and authorized personnel both for the Contractor and Owner. This means of access shall be construed to sustain the weight of equipment customarily engaged for use in construction projects of this type and magnitude. The General Contractor shall, without additional compensation from the Owner, furnish labor and materials as may be required from time to time to maintain this means of access in an acceptable condition as determined by the Project Manager and Engineer. Pedestrian access shall provide adequate protection against falling debris, slippage, adequate lighting, warning and directional signs, and protection against construction activities.

1.25 CONSTRUCTION BARRIERS

- A. Proper construction barriers shall be provided around the contract work areas as defined by the Contract Drawings or as directed by the Owner.
- B. Construction barriers shall consist of traffic cones, ribbons, tapes, wood barriers, warning signs, directional signs, and other traffic materials to keep traffic from area of construction.
- C. Barriers shall be erected at such approved locations as are necessary, sufficiently cross-braced and supported adequately from floors and ceilings as required.

1.26 PARKING

- A. Only during contract working hours and to the extent available, existing parking facilities located at the construction area will be available for use by the General Contractor, subcontractors and their employees. Such parking areas shall be designated by Owner. The Owner shall not be responsible for cars, trucks, etc., or their contents and the Contractor and his subcontractors and material suppliers will use the designated area with this understanding.

1.27 SAFETY PROTECTION

- A. At no time shall the work be left unattended without proper safety protection and shall not be left unprotected to the weather and accessible to the public. It is the responsibility of the General Contractor to maintain proper safety protection for the public while work is in progress or unattended.

1.28 VEHICLE AND EQUIPMENT PROTECTION

- A. All construction activities shall be performed in such a manner so as not to dust, stain or damage any building elements, equipment, vehicles, etc., within general vicinity of the construction work area. Any damage to these items shall be cleaned and repaired at the expense of the Contractor.

1.29 SHORING

- A. Provide all temporary shoring and bracing as required for the proposed work. Comply with all applicable codes and standards. Plans and details for shoring, stamped by Engineer licensed in Massachusetts, shall be submitted for approval.

1.30 CONSTRUCTION FENCE

- A. A construction fence shall be provided along the entire perimeter of the contract limit lines, and shall be kept in good repair at all times.
- B. Construction fences shall be 6 ft high and of chain link, or approved equal, erected in a substantial manner, straight, plumb and true as approved by the Engineer.
- C. Gates shall be built into fence at such approved locations as are necessary, well cross-braced and hung on heavy strap hinges with proper post and hook for double gates. Provide heavy hasps and padlocks for each gate. Provide a set of three keys for each lock to Owner to facilitate emergency access.
- D. Fencing shall be removed by the Contractor at no cost to the Owner at such time before final completion as the Engineer directs. Restore site to acceptable condition after removing fence.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 6000

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to the Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Division 1 Specifications which are hereby made a part of this section.

1.02 DESCRIPTION OF REQUIREMENTS

- A. Definitions: Definitions used in this Paragraph are not intended to negate the meaning of other terms used in the Contract Documents, including such terms as “specialties”, “systems”, “structure”, “finishes”, “accessories”, “furnishings”, “special construction”, and similar terms. Such terms are self-explanatory and have recognized meanings in the construction industry.
1. “Products” are items purchases for incorporation into the Work, regardless of whether they were specifically purchased for the project or taken from the Contractor’s previously purchases stock. The term “product” as used herein includes the terms “material”, “equipment”, “system”, and other terms of similar intent.
 - a. “Named Products” are products identified by use of the manufacturer’s name for a product, including such items as a make or model designation, as recorded in published product literature, of the latest issue as of the date of the Contract Documents.
 2. “Materials” are products that must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, or installed to form units of work.
 3. “Equipment” is defined as a product with operational parts, regardless of whether motorized or manually operated, and in particular, a product that required service connections such as wiring or piping.
- B. Substitutions: The Contractor’s requests for changes in the products, materials, equipment, and methods of construction required by the Contract Documents are considered requests for “substitution”, and are subject to the requirements specified herein. The following are not considered as substitutions:
1. Revisions to the Contract Documents, where requested by the Owner or Engineer are considered as “changes”, not substitutions.

2. Substitutions requested during the bidding period, which have been accepted prior to the Contract Date, are included in the Contract Documents and are not subject to the requirements for substitutions as herein specified.
 3. Specified Contractor options on products and construction methods included in the Contract Documents are choices available to the Contractor and are not subject to the requirements for substitution as herein specified.
 4. Except as otherwise provided in the Contract Documents, the Contractor's determination of and compliance with governing regulations and orders as issued by the governing authorities do not constitute "substitutions" and do not constitute a basis for change orders.
- C. Standards" Refer to Division 1 Section "References" for the applicability of industry standards to the products specified for the project.

1.03 QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same generic kind, from a single source, for each unit of work.
1. When it is discovered that specified products are available only from sources that do not or cannot produce an adequate quantity to complete project requirements in a timely manner, consult with the Engineer for a determination of what product qualities are most important before proceeding. The Engineer will designate those qualities, such as visual, structural, durability, or compatibility, that are most important. When the Engineer's determination has been made, select products from those sources that product products that possess the most important qualities, to the fullest extent possible.
- B. Compatibility of Options: Compatibility of products is a basic requirement of product selection. When the Contractor is given the option of selecting between two or more products for use on the project, the product selected must be compatible with other products previously selected, even if the products previously selected were also Contractor options. The complete compatibility between the various choices available to the Contractor is not assured by the various requirements of the Contract Documents, but must be provided by the Contractor.

1.04 SUBMITTALS

- A. Substitution Request Submittal:
1. Requests for Substitutions: Submit the number of copies required in Section 013300 Submittal Requirements for each request for substitution. In each request identify the product or fabrication or installation method to be replaced by the substitution; include related specification section and drawing numbers, and complete documentation showing compliance with the requirements for substitutions. Include the following information, as appropriate, with each request.

- a. Provide complete product data, drawings, and description of products, and fabrication and installation procedures.
- b. Provide samples where applicable or requested.
- c. Provide a detailed comparison of the significant qualities of the proposed substitution with those of the work originally specified. Significant qualities include elements such as size, weight, durability, performance, and visual effect where applicable.
- d. Provide complete coordination information. Include all changes required in other elements of the work to accommodate the substitution, including work performed by the Owner and separate Contractors.
- e. Provide a statement indicating the effect the substitution will have on the work schedule in comparison to the schedule without approval of the proposed substitution. Include information regarding the effect of the proposed substitution on the Contract Time.
- f. Provide complete cost information, including a proposal of the net change, if any, in the Contract Sum.
- g. Provide certification by the Contractor to the effect that, in the Contractor's option, after thorough evaluation, the proposed substitution will result in work that in every significant respect is equal to or better than the work required by the Contract Documents, and that it will perform adequately in the application indicated.
 - 1) Include in this certification the Contractor's waiver of rights to additional payment or time, which may subsequently be necessary because of the failure of the substitution to perform adequately

B. Change Order Form: Submit requests for substitutions in the form and in accordance with the procedures required for change order proposals.

1. LRTA Project Manager Action: Within fifteen (15) days of receipt of the Contractor's request for substitution, the LRTA Project Manager will request additional information or documentation as may be needed for evaluation of the request. Within thirty (30) days of receipt of the request, or within fifteen (15) days of receipt of the requested additional information or documentation, whichever is later, the LRTA Project Manager will notify the Contractor of either the acceptance or rejection of the proposed substitution.
2. Acceptance will be in the form of a signed and approved change order
3. Rejection will include a statement giving reasons for the rejection.

1.05 TRANSPORTATION AND HANDLING

A. Refer to the 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 manufacturers' 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 ensure that products comply with requirements, that quantities are correct, and that products are undamaged.

1.06 STORAGE AND PROTECTION

- A. Refer to the Contract and General Conditions and Specifications Sections for requirements pertaining to storage and protection of materials and equipment.
- B. Store products in accordance with manufacturers' instruction, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturers' instructions.
- C. 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.
- D. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.
- E. Arrange storage to provide access for inspection. Periodically inspect to ensure that products are undamaged and are maintained under required conditions.
- F. Protect masonry and stone products from damage and staining.
- G. Protect finished materials, including window frames and doors, with protection acceptable to the Owner.
- H. Store heavy materials away from the project structure in a manner that will not endanger the supporting construction.

PART 2 - PRODUCTS

2.01 GENERAL PRODUCT COMPLIANCE

- A. General: Requirements for individual products are indicated in the Contract Documents; compliance with these requirements is in itself a contract requirement. These requirements may be specified in any one of several different specifying methods, or in any combination of these methods. These methods include the following:
 - 1. Proprietary
 - 2. Descriptive
 - 3. Performance

4. Compliance with Reference Standards

- a. Compliance with codes, compliance with graphic detail, allowances, and similar provisions of the Contract Documents also have a bearing on the selection process.

B. Procedures for Selecting Products: The Contractor's options in selecting products are limited by requirements of the Contract Documents and governing regulations. They are not controlled by industry traditions or procedures experienced by the Contractor on previous construction products. Required procedures include but are not limited to the following for the various indicated methods of specifying:

C. Semi-proprietary Specification Requirements

1. Two or More Product Names: Where two or more products or manufacturers are named, provide one of the products named, at the Contractor's option. Exclude products that do not comply with specification requirements. Do not provide or offer to provide an unnamed product, unless the specification indicates possible consideration of other products. Advise the Engineer before proceeding where none of the named products comply with specification requirements or are feasible to use.
 - a. Where products or manufacturers are specified by name, accompanied by the term "or equal" or similar language, comply with the Contract Document provisions concerning "substitutions" to obtain approval from the LRTA Project Manager for the use of an unnamed product. The mention of products by trade name or manufacturer, with the designation "or equal", "or equivalent", "or product meeting specified requirements", is intended to convey to the Contractor that degree of excellence required. The products of manufacturers other than those named will in such cases be accepted if, to the best of the Project Manager and Engineer's knowledge, information, and belief, they are equal in strength, durability, usefulness, suitability, performance, and convenience for the purpose intended. The Project Manager with advice from the Engineer shall be the sole judge of the qualifications of such products and will determine all questions regarding the conformation of any products with the Project Manual. Any changes required in the details and dimensions as shown on the Drawings for the substitution of standard products shall be properly made as approved by the Engineer and at the expense of the Contractor.
2. Non-Proprietary Specification Requirements: Where the specification name products that are available and may be incorporated in the Work, but do not restrict the Contractor to the use of these products only, the Contractor may, at his option, use any available product that has the exact characteristics of the specified product and otherwise comply with Contract requirements.
3. Descriptive Specification Requirements: Where the specifications describe a product or assembly generically, in detail, listing the exact characteristics required, but without use of a brand or trade name, provide products or assemblies that provide the characteristics indicated and otherwise comply with Contract requirements.

4. Performance Specification Requirements: Where the specifications require compliance with indicated performance requirements, provide products that comply with the specific performance requirements indicated, and that are recommended by the manufacturer for the application indicated. The manufacturer's recommendations may be contained in published product literature, or by the manufacturer's individual certification of performance. General overall performance of a product is implied where the product is specified for specific performances.
5. Compliance with Standards, Codes, and Regulations: Where the specifications require only compliance with an imposed standard, code or regulation, the Contractor has the option of selecting a product that complies with specification requirements, including standards, codes, and regulations.
6. Visual Matching: Where matching an established sample is required, the final judgment of whether a product proposed by the Contractor matches the sample satisfactorily will be determined by the Project Manager with the advice of the Engineer. Where there is no product available within the specified product category that matches the sample satisfactorily and also complies with other specified requirements, comply with the provisions of the Contract Documents concerning "substitutions" and "change orders" for the selection of a matching product in another product category, or for non-compliance with specified requirements.
7. Visual Selection: Except as otherwise indicated, where specified product requirements include the phrase "...as selected from the manufacturer's standard colors, patterns, textures..." or similar phrases, the Contractor has the option of selecting the product and manufacturer, provided the selection complies with other specified requirements. The Engineer is subsequently responsible for select the color, pattern, and texture from the product line selected by the Contractor.

2.02 SUBSTITUTIONS

- A. Conditions: The Contractor's request for a substitution will be received and considered when extensive revisions to the Contract Documents are not required, when the proposed changes are in keeping with the general intent of the Contract Documents, when the requests are timely, fully documented, and properly submitted, and when one or more of the following conditions is satisfied, all as judged by the Project Manager and Engineer; otherwise the requests will be returned without except to record non-compliance with these requirements:
 1. The Project Manager and Engineer will consider a request for substitution where the request is directly related to an "or equal" clause or similar language in the Contract Documents.
 2. The Project Manager and Engineer will consider a request for substitution where the specified product or method cannot be provided within the Contract Time. However, the request will not be considered if the product or method cannot be provided as a result of the Contractor's failure to pursue the work promptly or to coordinate the various activities properly.

3. The Project Manager and Engineer will consider a request for substitution where the specified product or method cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 4. The Project Manager and Engineer will consider a request for a substitution where a substantial advantage is offered the Owner, in terms of cost, time, energy conservation, or other considerations of merit, after deducting of offsetting responsibilities the Owner may be required to bear. These additional responsibilities may include such considerations as additional compensation to the Project Manager and Engineer for redesign and evaluation services, the increased cost of other work by the Owner or separate contractors, and similar considerations.
 5. The Project Manager and Engineer will consider a request for substitution when the specified product or method cannot be provided in a manner which is compatible with other materials of the work, and where the Contractor certifies that the substitution will overcome the incompatibility.
 6. The Project Manager and Engineer will consider a request for substitution when the specified product or method cannot be properly coordinated with other materials in the work, and where the Contractor certifies that the proposed substitution can be properly coordinated.
 7. The Project Manager and Engineer will consider a request for substitution when the specified product or method cannot receive a warranty as required by the Contract Documents and where the Contractor certifies that the proposed substitution receive the required warranty.
- B. Work-Related Submittals: The Contractor's submittal of and the Project Manager and Engineer's of shop drawings, product data, or samples which related to work not complying with the requirements of the Contract Documents, does not constitute an acceptance or valid request for a substitution, nor approval thereof.

2.03 GENERAL PRODUCT REQUIREMENTS

- A. General: Provide products that comply with the requirements of the Contract Documents that are undamaged and, unless otherwise indicated, unused at the time of installation. Provide products that are complete with all accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and for the intended use and effect.
- B. Standard Products: Where they are available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- C. Continued Availability: Where, because of the nature of its application, the Owner is likely to need replacement parts or additional amounts of a product at a later date, either for maintenance and repair or replacement, provide standard, domestically produced products for which the manufacturer has published assurances that the products and its parts are likely to be available to the Owner at a later date.

- D. Nameplates: Except as otherwise indicated for required labels and operating data, do not permanently attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view either in occupied spaces or on the exterior of the completed project.
- E. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface which, in occupied spaces, is not conspicuous.
- F. Equipment Nameplates: Provide a permanent nameplate on each items of service-connected or power-operated equipment. Locate the nameplate on an easily accessible surface which is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data.
 - 1. Name of manufacturer
 - 2. Name of product
 - 3. Model number
 - 4. Serial number
 - 5. Capacity
 - 6. Speed
 - 7. Ratings
- G. Do not use materials and equipment removed from existing structures, except as specifically required, or allowed, by the Contract Documents.
- H. In the case of an inconsistency between Drawings and the Project Manual, or within either document that is not clarified by addendum, the product of greater quality or greater quantity of work shall be provided in accordance with the Engineer's interpretation.
- I. Workmanship
 - 1. Comply with industry standards except when more-restrictive tolerances or specified requirements indicate more-rigid standards or more-precise workmanship.
 - 2. Perform work by persons qualified to produce workmanship of specified quality.
 - 3. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

PART 3 - EXECUTION

3.01 INSTALLATION OF PRODUCTS

- A. General: Except as otherwise indicated in individual sections of these specifications, comply with the manufacturer's instructions and recommendations for installation of the products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work. Clean exposed surfaces and protect surfaces as necessary to ensure freedom from damage and deterioration at time of acceptance.

END OF SECTION

SECTION 01 6100

SAFETY

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to the Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Division 1 Specifications which are hereby made a part of this section.

1.02 DESCRIPTION OF WORK

- A. Work Included: Without intending to limit or restrict the extent of Work involved, the work includes:
 - 1. The preparation and implementation of a Contractor's Health and Safety Plan

1.03 MEASUREMENT AND PAYMENT

- A. Health and safety will not be measured for payment.
- B. All costs for health and safety shall be included in the unit costs or lump sum prices for work requiring health and safety work. No separate measurement will be made for work required in this Section.

1.04 SAFETY AND HEALTH PLAN

- A. Construction site safety is the sole responsibility of the Contractor.
- B. Comply with *Safety and Health Requirements Manual (EM 385-1-1)* latest edition, published by the U.S. Army Corps of Engineers (USCOE). Copies of EM 385-1-1 may be obtained from the Government Printing Office: Superintendent of Documents, Government Printing Office Washington DC 20402-9325, phone: 202-783-3238.
- C. Conduct work to prevent any laborer, mechanic, or other employee from exposure to conditions that are unsanitary, hazardous, or dangerous to health and safety, as determined under construction safety and health standards promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327 et seq.) as amended. Construction safety and health standards promulgated by the Secretary of Labor may be obtained by the regional or area office of the Occupational Safety and Health Administration of the U.S. Department of Labor.

- D. Immediately correct violations of the safety and health requirements contained in these specifications or standards referenced above. Notification of violations noted by the LRTA Project Manager, Owner or Engineer may be verbal or written. Failure of the Owner or Engineer to provide notification of health or safety violations does not relieve the Contractor from responsibility for conformance with the regulations and safety of personnel and property.
- E. If the contractor fails to promptly correct violations of the safety and health standards and requirements, noted by the Owner, the Owner will issue and order to stop all or part of the work. When satisfactory corrective action is taken, an order to resume work will be issued. The Contractor shall not be entitled to any extension of time, nor to any claim for damage or additional compensation by reason of either the notification of a violation or the stop work order.

1.05 SUBMITTALS

- A. Submit Contractor's Health and Safety Plan. The Safety and Health Plan submittal is for information and records purposes. The Engineer and Owner will not review the Safety and Health Plan. Work will not be allowed to proceed prior to receipt of the Health and Safety Plan.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 7700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to the Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Division 1 Specifications which are hereby made a part of this section.

1.02 DESCRIPTION OF REQUIREMENTS

- A. Definitions: Project closeout is the term used to describe certain collective project requirements, indicating completion of the work that is to be fulfilled near the end of the Contract Time in preparation for final acceptance and occupancy of the work by the Owner, as well as final payment to the Contractor and the normal termination of the Contract.
 - 1. Specific requirements for individual units of work are included in the appropriate sections in Divisions 2 through 16.
 - 2. Time of closeout is directly related to “Substantial Completion”; therefore, the time of closeout may be either a single time period for the entire work or a series of time periods for individual elements of the work that have been certified as substantially complete at different dates. This time variation, if any, shall be applicable to the other provisions of this section.

1.03 PREREQUISITES TO SUBSTANTIAL COMPLETION

- A. General: In addition to the requirements in the General Conditions complete the following before requesting the Project Manager and Engineer’s inspection for certification of substantial completion, either for the entire work or for portions of the work. List known exceptions in the request.
 - 1. In the progress payment request that coincides with or is the first request following the date substantial completion is claimed, show either 100% completion for the portion of the work claimed as “substantially complete”, or list incomplete items, the value of incomplete work, and reasons for the work being incomplete.
 - 2. Include support documentation for completion as indicated in these Contract Documents.
 - 3. Submit a statement showing an accounting of changes to the Contract Sum.
 - 4. Advise Owner of pending insurance change-over requirements.

5. Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, final certifications, and similar documents.
 6. Obtain and submit releases enabling Owner's full, unrestricted use of the work and access to services and utilities. Where required, include occupancy permits, operating certificates, and similar releases. Obtain the required inspections and releases by local building officials.
 7. Comply with requirements indicated in Specification Section 013200 Schedules, Report, Payments.
- B. Inspection Procedures: Upon receipt of Contractor's request for inspection, the Owner will either proceed with inspection or advise Contractor of unfulfilled prerequisites.
1. Following the initial inspection, the Owner will either prepare the certificate of substantial completion, or will advise Contractor of work which must be performed before the certificate will be issued. The Owner will repeat the inspection when requested and when assured that the work had been substantially completed.
 2. Results of the completed inspection will form the initial "punchlist" for final acceptance.

1.04 PREREQUISITES TO FINAL ACCEPTANCE

- A. General: Complete the following before requesting the Owner's final inspection for certificate of final acceptance, and final payment as required by the General and Supplementary Conditions. List known exceptions, in any, in request.
1. Submit the final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 3. Submit a certified copy of the Owner's final punchlist of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance and has been endorsed and dated by the Owner.
 4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of substantial completion, or else when the Owner took possession of and responsibility for corresponding elements of the work.
 5. Submit consent of surety.
 6. Submit a final liquidated damages settlement statement, acceptable to Owner.

7. Submit evidence of final, continuing coverage complying with insurance requirements.
 8. Complete with requirements indicated in Specification Section 013200 Schedules, Reports, Payments.
- B. Re-inspection Procedure: The Owner will re-inspect the work upon receipt of the Contractor's notice that the work, including punchlist items resulting from earlier inspections, has been completed, except for those items whose completion has been delayed because of circumstances that are acceptable to the Owner.
1. Upon completion of re-inspection, the Owner will either prepare a certificate of final acceptance, or will advise the Contractor of work that is incomplete or of obligations that have not been fulfilled, but are required for final acceptance.
 2. If necessary, the re-inspection procedure will be repeated.

1.05 RECORD DOCUMENT SUBMITTALS

- A. General: Specific requirements for record documents are indicated in the individual sections of the Specifications. Other requirements are indicated in the General Conditions. General submittal requirements are indicated in "submittals" sections.
1. Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Engineer's reference during normal working hours.
- B. Record Drawings: Maintain a record set of blue or black line white prints of contract drawings and shop drawings in a clean, undamaged condition. Mark-up the set of record documents to show the actual installation where the installed work varies substantially from the work as originally shown. Mark whichever drawing is most capable of showing the actual "field" condition fully and accurately; however, where shop drawing are used for mark-up record a cross-reference at the corresponding location on the contract drawings. Give particular attention to concealed work that would be difficult to measure and record at a later date.
1. Mark record sets with red erasable pencil, and, where feasible, use other colors to distinguish between variations in separate categories of work.
 2. Mark-up new information which is known to be important to the Owner, but for some reason was not shown on either contract drawings or shop drawings.
 3. Note related change order number where applicable.
 4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates, and other identification on cover of each set.
 5. Upon completion of the work, submit record drawings to the Engineer for the Owner's records.

- C. Record Specifications: Maintain one complete copy of the Project Manual including specifications and addenda, and one copy of other written construction documents such as change orders, and similar modifications issued in printed form during construction. Mark these documents to show substantial variations in the actual work performed in comparison with the text of the specifications and modification as issued. Give particular attention to substitutions, selection of options, and similar information on work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation. Note related record drawing information and product data, where applicable.
1. Upon completion of the work, submit record specifications to the Engineer for the Owner's records.
- D. Record Product Data: Maintain one copy of each product data submittal. Mark these documents to show significant variations in the actual work performed in comparison with the submitted information. Include both variations in the products as delivered to the site, and variations from the manufacturer's instructions and recommendations for installation. Give particular attention to concealed products and portions of the work which cannot otherwise be readily discerned at a later date by direct observation. Note related change orders and mark-up of record drawings and specifications.
1. Upon completion of mark-up, submit complete set of record product data to the Engineer for the Owner's records.
- E. Record Sample Submittal: Immediately prior to date or dates of substantial completion, the Contractor will meet at the site with the LRTA Project Manager, Engineer and the Owner's personnel, if desired, to determine which, if any, of the submitted samples that have been maintained by the Contractor during progress of the work, are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's sample storage space.
- F. Miscellaneous Record Submittals: Refer to other sections of these specifications for requirements of miscellaneous recordkeeping and submittals in connection with the actual performance of the work. Immediately prior to the date or dates of substantial completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the LRTA Project Manager for the Owner's records.
- G. Operation and Maintenance Manual: Comply with the requirements indicated in Specification Section 013300 Submittals. Submit to the LRTA Project Manager for the Owner's records.

1.06 GUARANTEES AND WARRANTIES

- A. Submit to the LRTA Project Manager & Engineer all extended guarantees and warranties that have been specified in various, individual Sections of the Specifications. Guarantees shall be assembled by Specification No. and Section in accordance with Specifications Table of Contents.
1. Guarantees and warranties shall be enforceable in the Commonwealth of Massachusetts and subject to interpretation in accordance with the laws of the Commonwealth of Massachusetts.

- B. Unless more-stringent requirements are otherwise specified, guarantee all work against defects of materials, equipment, and workmanship for one year from the Date of Completion or the date of issue of Certificate of Use/Occupancy for the building or portion thereof, whichever occurs first.
- C. If, within any guarantee period, repairs or changes are required in connection with guaranteed work, Contractor shall promptly upon receipt of notice from Owner, and without additional expense to Owner, within ten days:
 - 1. Place in satisfactory condition in every particular all guaranteed work and correct all defects.
 - 2. Make good all damage to building, site equipment, or contents thereof, including redecoration that, in the opinion of the Project Manager, results from the use of material, equipment, or workmanship that are inferior, defective, or not in accord with the terms of the Contract.
- D. If Contractor, after such notice, fails to proceed immediately to comply with terms of guarantee, Owner may correct defects and hold Contractor liable for all expenses incurred.
- E. Promptly after completion of the work, obtain from each subcontractor where a guarantee is required, a warranty addressed to and in favor of the Owner.
- F. Delivery of any warranty required does not relieve the Contractor from any obligation assumed under other provisions of the Contract.
- G. Deliver guarantees and warranties to the LRTA Project Manager before or with the application for Final Payment.
- H. The general warranty set forth in the General Conditions is in addition to, exclusive of, and not in substitution of such guarantees as may be required in the Specifications.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 FINAL CLEANING

- A. General: Special cleaning requirements for specific units of work are included in the appropriate sections of Division 2 through 33. General cleaning during the regular progress of the work is required by the General Conditions and is also included in other Contract Documents.

- B. Cleaning: Provide final cleaning of the work at the time indicated. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of work to the condition expected for a normal, commercial building cleaning and maintenance program. Comply with the manufacturer's instructions for operations.
1. Complete the following cleaning operations before requesting the Engineer's inspection for certification of substantial completion.
 2. Remove labels which are not required as permanent labels.
 3. Clean transparent materials, including mirrors and glass in doors and windows, to a polished condition. Remove putty and other substances which are noticeable as vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 4. Clean exposed exterior and interior hard-surface finishes to a dust-free condition, free of dust, stains, films and similar noticeable distracting substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
 5. Wipe surfaces of mechanical and electrical equipment clean. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 6. Clean the project site, including landscape development areas, of rubbish, litter, and foreign substances. Sweep paved areas to a broom-clean condition; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.
- C. Pest Control: Engage an experienced exterminator to make a final inspection of the project and to rid project of rodents, insects, and other pests.
- D. Removal of Protection: Except as otherwise indicated or requested by the Engineer, leave in place those temporary protection devices and facilities which were installed during the course of the work.
- E. Compliances: Comply with safety standards and governing regulations for cleaning operations. Do not burn waste material at the site. Do not bury debris or excess material on the Owner's property. Do not discharge volatile or other harmful or dangerous materials into drainage system. Remove waste materials from the site and dispose of in a lawful manner.
- F. Where extra materials of value remaining after completion of associated work have become the Owner's property, dispose of these to the Owner's best advantage as directed.

END OF SECTION

SECTION 06 1000

CARPENTRY

PART I - GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section specifies the following items:
 - 1. Wood nailers, backing and blocking.
 - 2. Anchors and fasteners.

1.2 DEFINITIONS

- A. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.
- B. Lumber grading agencies, and the abbreviations used to reference them include the following:
 - 1. ALSC: American Lumber Standard Committee
 - 2. AWP: American Wood-Preservers Association
 - 3. DHI: Door and Hardware Institute
 - 4. NELMA: Northeastern Lumber Manufacturers Association
 - 5. NHLA: National Hardware Lumber Association
 - 6. NLGA: National Lumber Grades Authority

1.3 SUBMITTALS

- A. Submit for each type of process and factory-fabricated product. Indicate component materials and dimensions, and include construction and application details.
 - 1. Include data for wood preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
 - 2. Include data for fire retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
 - 3. For fire retardant treatments specified to be High-Temperature (HT) type, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5664.

4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to project site.
 5. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
- B. For the following products, provide compliance documentation with applicable building and state codes:
1. Preservative treated wood.
 2. Fire- retardant-treated wood.
 3. Power driven fasteners.
 4. Powder-actuated fasteners.
 5. Expansion anchors.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.
- B. Deliver interior wood materials that are to be exposed to view only after building is enclosed and weatherproof, wet work other than painting is dry, and HVAC system is operating and maintaining temperature and humidity at occupancy levels.

PART 2- PRODUCTS

2.1 WOOD PRODUCTS

- A. Lumber: Provide lumber graded by DOC PS 20 standards and applicable rules of grading agencies. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
1. Factory mark each piece of lumber with grade stamp of grading agency.
 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
 3. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, produce minimum dressed sizes for dry lumber.
 4. Provide dressed lumber sanded four sides (S4S) unless otherwise indicated.

2.2 WOOD PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process complying in requirements of AWWA C2.
1. Preservative Chemicals: Acceptable to the Authority and containing no arsenic or chromium.

- B. Kiln-dry lumber after treatment to maximum moisture content of 19 percent.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat miscellaneous carpentry, including the following:
 - 1. Wood blocking furring and similar concealed members in contact with masonry or concrete.

2.3 FIRE- RETARDANT-TREATED MATERIALS.

- A. General: Comply with performance requirements in AWP C20 (Lumber).
 - 1. Use treatment that does not promote corrosion of metal fasteners.
 - 2. Use exterior type for exterior locations and where indicated.
 - 3. Use Interior Type A, High Temperature for enclosed roof framing and where indicated
 - 4. Use Interior Type A, unless otherwise indicated.
- B. Identify fire-retardant-treated wood with appropriate classification marking of Underwriters Laboratory.
 - 1. All lumber and plywood to have a flame spread rating of 25 or less when tested in accordance with ASTM E-84, Standard Test Method for Surface Burning Characteristics of Building Materials
- C. Application: Treat concealed miscellaneous carpentry, including but not limited to the following:
 - 1. Concealed blocking.
- D. Products: Subject to compliance with requirements, provide products by one of the following:
 - 1. Dricon; a Division of Hickson Corporation.
 - 2. Hoover Treated Wood Products.
 - 3. Bestway of New England.

2.5 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking
 - 2. Nailers
 - 3. Cants
 - 4. Furring

- B. For items of dimension lumber size, provide Construction or No.2 grade lumber with 15 percent maximum moisture content and any of the following species:
 - 1. Hem-fir (north); NLGA
 - 2. Spruce-Pine-fir; NLGA
- C. For concealed boards, provide lumber with 15 percent maximum moisture content and any of the following species and grades:
 - 1. Hem-fir or hem fir (North), Construction or 2 Common grade; NLGA.
 - 2. Spruce-pine-fir (south) or spruce-pine fir, Construction or 2 common grade; NELMA or NLGA
- D. For blocking not used for attachment of other construction, utility, stud, or No.3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with the attachment and purpose.
- E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.
- F. Application: Provide kiln dried lumber in the following locations:
 - 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

2.6 PLYWOOD BACKING PANELS

- A. Electrical Equipment Backing Panels: DOC PS1, Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated, or if not indicated, not less than ½ inch nominal thickness.

2.7 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 316 stainless steel.
- B. Nails, Brads, and Staples: Complying with the requirements of ASTM F 1667.
- C. Power-Driven Fasteners: Complying with NES NER-272.
- D. Wood Screws: Complying with the requirements of ASME B18 .6.1.

- E. Screws for Fastening to Cold-Formed Metal Framing: Complying with the requirements ASTM C954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material be fastened.
- F. Lag Bolts: Complying with ASEM B18. 2.1.
- G Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated flat washers.
- H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
 - 1. Material : Stainless steel with bolts and nuts complying with ASTM F593 and ASTM F 594 Alloy group 1 or 2.

PART 3- EXECUTION

3.1 GENERAL

- A. Set carpentry to required levels and lines with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking and similar supports to comply with requirements for attaching other construction.
- B. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items and trim.
- C. Sort and select lumber so that natural characteristics will not interfere with installation or fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- D. Comply with AWWA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
 - 1. Use inorganic boron for items that are continuously protected from liquid water.
- E. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. NER-272 for power driven fasteners.
 - 2. Table 2304.9.1, "Fastening Schedule", in the International Building Code.
- F. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

3.2 WOOD BLOCKING AND NAILER INSTALLATION

- A. Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

3.3 FIRE- RETARDANT-TREATED (FRT) MATERIALS INSTALLATION

- A. Cutting to length, drilling holes, joining cuts and light sanding are permissible. It is not necessary to field treat cut ends to maintain flame spread rating.
 - 1. Ripping, milling and surfacing of FRT lumber is not permitted.
 - 2. FRT Plywood can be cut in either direction without loss of fire protection.

3.4 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
- B. Protect rough carpentry from weather. If despite protection, rough carpentry becomes wet, apply EPA- registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION

SECTION 07 0150.19

PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Remove all roof systems and insulation down to concrete at areas indicated on Drawings.
- B. Remove all flashing material from all vertical surfaces and penetrations at areas indicated on Drawings.
- C. Check all decking for mold penetration and remove where located.

1.2 PRE-INSTALLATION CONFERENCE

- A. Refer to Section 07 5323 – Ethylene-Propylene-Diene-Terpolymer (EPDM) Roofing.
- B. Review installation procedures and coordination required with related work.

1.3 ENVIRONMENTAL REQUIREMENTS

- A. Do not remove existing roofing system or damaged decking when weather conditions threaten the integrity of the building contents or intended continued occupancy. Maintain continued temporary protection prior to installation of the new roofing system.

1.4 PROTECTION

- A. It shall be the Contractor's responsibility to respond immediately to correction of roof leakage during construction. A four (4) hour time limit shall be given from the time of notification of emergency conditions. In the event of water penetration during rain or a storm, the Contractor shall provide for repair or protection of the building contents and interior. The Contractor shall be back charged for all expenses and damages, if any.

1.5 SCHEDULING

- A. Schedule work to coincide with commencement of installation of new roofing system.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Temporary protection; Sheet Polyethylene. Provide weights or fasteners to retain sheeting in position.
- B. Base Sheet: ASTM D-4601 Type II. Provide weights or fasteners to retain sheeting in position.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Roofing Contractor to verify existing site conditions, including roof dimensions.
- B. Verify that existing roof surface is clear and ready for work of the section.

3.2 MATERIALS REMOVAL

- A. Remove all membrane, cant strips, base flashings, and any other items shown on the drawings. In addition, completely removal of all nails and other debris to leave a smooth, even surface for re-roofing.
- B. Under certain conditions, it will be necessary and desirable to incorporate one or more of the following methods for removal of dirt, silt, gravel, debris, roof membrane, and insulation from the roof surface in order to preserve the ecology, eliminate unsightly conditions, and protect the building surfaces:
 - 1. Enclosed chutes with protective shrouds on the building and ground surfaces.
- C. All debris dumped from the roof shall be transported from the roof via chutes into dumpsters or trucks, and this debris shall be removed from the premises and disposed of off site when vehicles are full. Contractor shall be responsible for securing a disposal site for the roofing debris. No debris shall be transported from the area being worked on over a previously finished roof without an underlayment of 3/4" plywood.
- D. All roof equipment not in use or left filled will be parked on the column lines on 3/4" plywood.
- E. Contractor shall provide cut off (night tie in) at the end of each day's work.

3.3 TEMPORARY PROTECTION

- A. Provide temporary protective sheeting over uncovered deck surfaces.
- B. Turn sheeting up and over parapets and curbing. Retain sheeting in position with weights or temporary fasteners.
- C. Provide for surface drainage from sheeting to existing drainage facilities.
- D. Do not permit traffic over unprotected deck surface.

END OF SECTION

SECTION 07 2200
THERMAL INSULATION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Provide all labor, equipment, and materials to install roof insulation over the properly prepared deck substrate.

1.2 RELATED SECTIONS

- A. Related work specified elsewhere:
1. Section 06 1000 – ROUGH CARPENTRY
 2. Section 07 0150.19 – PREPARATION FOR RE-ROOFING
 3. Section 07 5323 – ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING
 4. Section 07 7100 – ROOFING SPECIALTIES

1.3 REFERENCES

ASTM A-167	Specification for Stainless and Heat-Resisting Chromium Nickel Steel Plate, Sheet and Strip
ASTM A-653	Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanized) by the Hot-Dip Process
ASTM B-29	Pig Lead
ASTM B-32	Solder Metal
ASTM C-165	Test Method for Measuring Compressive Properties of Thermal Insulation
ASTM C-208	Specifications for Cellulosic Fiber Insulating Board
ASTM C-209	Test Method for Cellulosic Fiber Insulating Board
ASTM C-272	Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
ASTM C-518	Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
ASTM D-5	Test Method for Penetration of Bituminous Materials
ASTM D-36	Test Method for Softening Point of Bitumen (Ring and Ball Apparatus)
ASTM D-312	Specification for Asphalt Used in Roofing

ASTM D-412	Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension
ASTM D-1621	Test Method for Compressive Properties of Rigid Cellular Plastics
ASTM D-1622	Test Method for Apparent Density of Rigid Cellular Plastics
ASTM D-1863	Specification for Mineral Aggregate Used on Built-Up Roofs
ASTM D-2126	Test Method for Response off Rigid Cellular Plastics to Thermal Humid Aging
ASTM D-2178	Standard Specification for Asphalt Glass Felts used in Roofing and Waterproofing
ASTM D-4601	Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing
ASTM D-5147	Sampling and Testing Modified Bituminous Sheet Material
CISPI	Cast Iron Soil Pipe Institute, Washington, D.C.
NRCA	National Roofing Contractors Association, Chicago, IL
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SDI	Steel Deck Institute, St. Louis, Missouri
SPIB	Southern Pine Inspection Bureau, Pensacola, Florida
FS HH-I-1972	Insulation Board, Polyisocyanurate
FS LLL-1-535B	Insulation Board, Thermal (Fiberboard)

1.4 SUBMITTALS

- A. Product Data: Provide manufacturer's specification data sheets for each product.
- B. Provide approval letters from insulation manufacturer for use of their insulation within this particular roofing system type.
- C. Provide a sample of each insulation type.
- D. Certification
 1. Submit roof manufacturer's certification that insulation adhesive furnished is acceptable to roof manufacturer.
 2. Submit roof manufacturer's certification that insulation furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.

- B. Store all insulation materials in a manner to protect them from the wind, sun and moisture damage prior to and during installation. Any insulation that has been exposed to any moisture shall be removed from the project site.
- C. Keep materials enclosed in a watertight, ventilated enclosure (i.e. tarpaulins).
- D. Store materials off the ground. Any warped, broken or wet insulation boards shall be removed from the site.

1.6 QUALITY ASSURANCE

- A. Fire Classification, ASTM E-108.
- B. Submit certification that the roof system furnished meets local or nationally recognized building codes for fire Class A and/or wind resistance.

PART 2 - PRODUCTS

2.1 APPROVED EQUIVALENT

- A. Contractor must submit any product not specified a minimum five days before the bid due date to Engineer in order for product to be considered for approval. The Engineer will notify Contractor in writing of decision to accept or reject request.

2.2 INSULATION MATERIALS

- A. Provide thicknesses of insulation as indicated, provide combination of types and thicknesses to provide a complete system.
 - 1. Rigid Polyisocyanurate Roof Insulation (ASTM C1289)
 - a. Qualities: Rigid, closed cell polyisocyanurate foam core bonded to heavy-duty glass fiber mat facers.
 - 1. Thickness: As indicated on drawings.
 - 2. R-Value: 25 Minimum combined
 - 3. Board Size: 4' x 4'
 - b. Source
 - 1. ENRGY 3 by Johns Manville
 - 2. FlintBoard ISO by Certainteed
 - 3. Energyguard by GAF
 - 4. Approved Equivalent
 - c. Insulation board shall meet the following requirements
 - 1. UL, WH or FM listed under Roofing Systems
 - 2. Federal Specification HH-I-1972, Class 1

- d. Physical Properties
 1. Dimensional Stability ASTM D-2126 2% max.
 2. Compressive Strength ASTM D-1621 25 psi min.
 3. Vapor Permeability ASTM E-96 1 perm max.
 4. Foam Core Density ASTM D-1622 2.0 pcf min.
 5. Water Absorption ASTM C-209 <1%
 6. R-Factor HR per inch Thickness ASTM C-518 5.6 (Design Value)
4. Tapered Polyisocyanurate Roof Insulation (drain sumps only)
 - a. Qualities: Factory Tapered, closed cell polyisocyanurate foam core bonded to heavy-duty glass fiber mat facers.
 1. Taper Thickness: Minimum 1 in. at low points.
 2. Tapered Slope: 1/4 in. per foot.
 3. Average R-Value: Minimum 10.0.
 - b. Source
 1. Tapered ENRGY 3 by Johns Manville
 2. FlintBoard ISO-T by Certainteed
 3. Energyguard by GAF
 4. Approved Equivalent
 - c. Insulation board shall meet the following requirements
 1. FM listed under Roofing Systems
 2. Federal Specification HH-I-1972, Class 1

2.3 RELATED MATERIALS

- A. Fiber Cant and Tapered Edge Strips: Performed rigid insulation units of sizes/shapes indicated, matching insulation board or of perlite or organic fiberboard, as per the approved manufacturer.
 1. Acceptable Manufacturers
 - a. The Garland Company, Inc.
 - b. Celotex
 - c. Johns-Manville Roofing Systems
 - d. International Permalite, Inc.
 - e. Approved Equivalent
- B. Single component insulation adhesive suitable for a concrete deck.
 1. Performance Requirements:
 - a. Tensile Strength (ASTM D-412-92) 250 psi
 - b. Density (ASTM D-1875-90) 8.5 lbs/gal
 - c. Viscosity (ASTM D-2556-93a) 2,000-60,000 cP
 - d. Peel Strength (ASTM D-903) 17 lb/in
 - e. Flexibility (ASTM D-816-12) Pass @ -70°F

PART 3 - EXECUTION

3.1 INSPECTION OF SURFACES

- A. Roofing contractor shall be responsible for preparing an adequate substrate to receive insulation.
 - 1. Verify that wood nailers are properly and securely installed.
 - 2. Examine surfaces for defects, rough spots, ridges, depressions, foreign material, moisture, and unevenness.
 - 3. Do not proceed until defects are corrected.
 - 4. Do not apply insulation until substrate is sufficiently dry.
 - 5. Broom clean substrate immediately prior to application.
 - 6. Use additional insulation to fill depressions and low spots that would otherwise cause ponding water.

3.2 INSTALLATION

- A. See Section 07 5323 – ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING.

3.3 CLEANING

- A. Remove debris and cartons from roof deck. Leave insulation clean and dry, ready to receive roofing membrane.

END OF SECTION

SECTION 07 5323

EPDM (ETHYLENE-POLYLENE-DIENE-MONOMER) SINGLE PLY ROOFING

PART 1 – GENERAL

1.1 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and related services needed to install a complete and warranted fully adhered roofing system consisting of fully adhered flexible sheet EPDM roofing system, roof insulation, perimeter edge flashing, parapet caps, new insulated equipment curbs, new penetration accessories, new scupper, new pressure treated wood nailers, all fasteners, miscellaneous caulking and damproofing necessary to satisfactorily complete the entire work.

1.2 DESCRIPTION

- A. All existing membrane and flashing materials shall be removed from the roof surface and properly disposed of. Concrete or metal deck substrate shall be made clean and prepared for application of roof insulation. Include/execute necessary substrate deck repairs as instructed by the authorized LRTA personnel.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience. EPDM membrane shall be separated by specified cover board from extruded polystyrene insulation. Installation of R-30 to satisfy FM Global Class 90 Wind Uplift Requirements for the field and prescriptive enhancements in the perimeter and corners, per FM Global Data Sheet 1-29 for adequate securement. Make adjustments to drainage as need with no excessive ponding on roof assembly or around drains.
- C. Roofing System Design: Roofing system shall be designed to withstand loads indicated on Drawings, but not less than loads required by Code.
- D. Flashings: Provide base flashings, perimeter flashings, detail flashings and component materials that comply with requirements and recommendations in FMG 1-49 Loss Prevention Data Sheet for Perimeter Flashings; FMG 1-29 Loss Prevention Data Sheet for Above Deck Roof Components; NRCA Roofing and Waterproofing Manual (Fourth Edition) for Construction Details and SMACNA Architectural Sheet Metal Manual (Fifth Edition) for Construction Details, as applicable.
- E. Remove and replace existing roof drains. New drain diameter shall be determined by diameter of existing drain openings. All drain bowls shall be insulated. The contractor shall be responsible to provide all drain accessories.
- F. New metal shall be installed at all projections and drains.

1.3 RELATED SECTIONS

- A. Section 06 1000 – ROUGH CARPENTRY
- B. Section 07 2200 - ROOF DECK AND INSULATION
- C. Section 07 5650 - PREPARATION FOR RE-ROOFING
- D. Section 07 6000 - FLASHING AND SHEET METAL

1.4 REFERENCES

- A. American Society of Civil Engineers (ASCE) - ASCE 7 - Minimum Design Loads for Buildings and Other Structures, Current Revision.
- B. ANSI/SPRI WD-1 "Wind Design Standard for Roofing Assemblies".
- C. ASTM International (ASTM):
 - 1. ASTM C 208 - Standard Specification for Cellulosic Fiber Insulating Board.
 - 2. ASTM C 578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
 - 3. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
 - 4. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
 - 5. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
 - 6. ASTM D 624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
 - 7. ASTM D 816 - Standard Test Methods for Rubber Cements.
 - 8. ASTM D 4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
 - 9. ASTM D 4637 - Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane.
 - 10. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.
 - 11. ASTM E108-00, Test Methods for Fire Test of Roof Coverings.
- D. Factory Mutual (FM Global):
 - 1. Approval Guide.
 - a. Factory Mutual Standard 4470 - Approval Standard for Class 1 Roof Covers.
 - b. Loss Prevention Data Sheet 1-29 for Above Deck Roof Components.
 - c. Loss Prevention Data Sheet 1-49 for Perimeter Flashings.
 - d. Loss Prevention Data Sheet 1-52 for Field Verification of Roof Wind Uplift Resistance.

- E. International Code Council (ICC): Massachusetts State Building Code, 9th Edition
 - 1. 2015 International Building Code (IBC) and Mass Amendments to IBC 2015
- F. National Roofing Contractors Association (NRCA) - Low Slope Roofing and Waterproofing Manual, Current Edition.
- G. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.

1.5 SYSTEM DESCRIPTION

- A It is the intent of this specification to install a long-term, quality roof system that meets or exceeds all current NRCA guidelines as stated in the most recent edition of the NRCA Roofing and Waterproofing Manual.

1.6 SUBMITTALS

- A. Product Data: Provide manufacturer's technical product data for each type of roofing product specified. Include data substantiating that materials comply with specified requirements.
- B. Samples: Submit two (2) samples of each product specified.
- C. Manufacturer's Installation Instructions: Submit installation instructions and recommendations indicating special precautions required for installing the membrane.
- D. Manufacturer's Certificate: Certify that roof system furnished is approved by Factory Mutual in accordance with ASTM E108, Class [A] for external fire and meets local or nationally recognized building codes.
- E. Manufacturer's Certificate: Certify that the roof system is adhered properly to meet or exceed the requirements of FM Global Class 90 Wind Up-Lift Requirements.
- F. Manufacturer's Certificate: Certify that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.
- G. Manufacturer's Certificate: Submit a certified copy of the roofing manufacturer's ISO 9001 compliance certificate.
- H. Test Reports: Submit test reports, prepared by an independent testing agency, for all EPDM roofing, indicating compliance with ASTM D5147.
- I. Submit a copy of an unexecuted manufacturer's warranty for review.

- J. Manufacturer providing warranty will submit a brief description of training program for job-site monitors. It will include a list of five (5) completed projects and contact information for reference.
- K. Contractor shall obtain and submit an FM Approved Roof Nav assembly number for each roof system. The assembly number can be found at www.roofnav.com.

1.7 QUALIFICATIONS

- A. Manufacturer of the EPDM roof membrane shall have a minimum (10) years experience in the manufacturing of EPDM roof membranes and have ISO 9001 certification.
- B. Installer: Company specializing in EPDM roofing installation with a minimum (5) years experience and certified by roofing system manufacturer as qualified to install manufacturer's roofing materials.
- C. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work and at any time roofing work is in progress. Maintain proper supervision of workmen. Maintain a copy of the specifications in the possession of the Supervisor/Foremen and on the roof at all times.
- D. Immediately correct roof leakage during construction. If the Contractor does not respond within twenty four (24) hours, the Engineer has the right to hire a qualified contractor and back-charge the original contractor.
- E. Insurance Certification: Assist Engineer in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.8 PRE-INSTALLATION CONFERENCE

- A. Pre-Roofing Conference: Convene a pre-roofing conference approximately two (2) weeks before scheduled commencement of EPDM roofing system installation and associated work.
- B. Require attendance of installer of each component of associated work, installers of deck or substrate construction to receive roofing work, installers of rooftop units and other work in and around roofing which must precede or follow roofing work (including mechanical work if any), Architect, Engineer, roofing system manufacturer's representative, and other representatives directly concerned with performance of the Work, including (where applicable) Authority's insurers, testing agencies and governing authorities.
- C. Objectives of conference to include:
 - 1. Review foreseeable methods and procedures related to roofing work.
 - 2. Tour representative areas of roofing substrates (decks), inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work performed by others.

3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
4. Review roofing system requirements (drawings, specifications and other contract documents).
5. Review required submittals both completed and yet to be completed.
6. Review and finalize construction schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
7. Review required inspection, testing, certifying and material usage accounting procedures.
8. Review weather and forecasted weather conditions and procedures for inclement conditions.
9. Record discussion of conference including decisions and agreements (or disagreements) reached and furnish copy of record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
10. Review notification procedures for weather or non-working days.

1.9 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.
- B. Store and handle roofing sheets in a dry, well-ventilated, weather-tight place to insure no possibility of significant moisture exposure. Store rolls of felt and other sheet materials on pallets or other raised surface. Stand all roll materials on end. Cover roll goods with a canvas tarpaulin or other breathable material (not polyethylene).
- C. Do not leave unused materials on the roof overnight or when roofing work is not in progress unless protected from weather and other moisture sources.
- D. It is the responsibility of the contractor to secure all material and equipment on the job site. If any material or equipment is stored on the roof, the contractor must make sure that the integrity of the deck is not compromised at any time. Damage to the deck caused by the contractor will be the sole responsibility of the contractor and will be repaired or replaced at his expense.

1.10 MANUFACTURER'S INSPECTIONS

- A. When the project is in progress, the roofing system manufacturer will provide the following:
 1. Keep the Engineer informed as to the progress and quality of the work as observed.

2. Provide daily job site inspections including documented weekly progress reports including photos.
3. Report to the Engineer in writing any failure or refusal of the Contractor to correct unacceptable practices called to the Contractor's attention.
4. The presence of the manufacturer's representative shall in no way be construed as the manufacturer or the representative as having any responsibility or oversight of the contractor's employees for safety issues. The sole purpose of the manufacturer's representative is to ensure the specified materials are applied in a manner consistent with this specification.

1.11 PROJECT CONDITIONS

- A. Weather Condition Limitations: Do not apply roofing membrane during inclement weather or when a 40% chance of precipitation is expected.
- B. Do not apply roofing insulation or membrane to damp deck surface.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.
- D. Installer to follow manufacturer's instruction on storage and use of adhesives during cold weather.

1.12 SEQUENCING AND SCHEDULING

- A. Sequence installation EPDM roofing with related units of work specified in other sections to ensure that roof assemblies including roof accessories, flashing, trim and joint sealers are protected against damage from effects of weather, corrosion and adjacent construction activity.
- B. Fully complete all EPDM roofing field assembly work each day. Phased construction will not be accepted.

1.13 WARRANTY

- A. Upon completion of installation, and acceptance by the Engineer and Architect, the manufacturer will supply to the Authority a 20-year NDL (No dollar limit) warranty.
- B. Installer will submit a minimum of a two (2) year warranty to the membrane manufacturer with a copy directly to Authority.
- C. Membrane manufacturer will provide an annual inspection for the life of the warranty. Follow up inspections to include photographs and written report.

1.14 PRODUCT OPTIONS AND SUBSTITUTIONS

- A. Any material submitted as an equal to the specified material must include a list of three (3) projects where the proposed material has been used in a similar roofing system as that which is specified and is located within a one hundred mile radius from the location of the project. In addition, the three projects must be at least three (3) years old and be available for inspection by the Architect, Engineer or Authority's Representative.
- B. Any deficiencies in performance, warranty terms or improper submittal procedure will constitute grounds for immediate rejection of substitution.
- C. PVC roof membrane system as well as two ply modified roof membrane systems will not be considered as equals to the specified system and will be immediately rejected.
- D. No EPDM membrane will be considered unless it can meet or exceed the performance characteristics described in section 2.2 of the project manual

PART 2 - PRODUCTS

2.1 PERFORMANCE STANDARD

- A. When a performance standard is specified it shall be indicative of a standard required.
- B. Any item or materials submitted as a substitution to the performance specified must comply in all respects as to the quality and performance specified. The Engineer shall be the sole judge as to whether or not an item submitted as a substitute is truly equal. Should the Contractor choose to submit a substitute product, he shall assume all monetary or other risk involved, should the Engineer find the substitution unacceptable.
- C. The Authority is concerned about quality performance in all areas of roofing construction and as a result is requiring the sourcing of all cold adhesives, ply sheets, flashing materials and related items to be manufactured by a single Roofing Materials manufacturer in order to ensure consistent quality.

2.2 EPDM ROOFING MEMBRANE

- A. EPDM Sheet: ASTM D4737 Type I, nonreinforced uniform, flexible sheet made from EPDM, and as follows:
 - 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. Carlisle – Sure-Seal Kleen EPDM
 - b. Firestone – Rubbergard EPDM Platinum.
 - c. Johns Manville – JM EPDM NR

2. Color: Black
3. Thickness: 60 mils (1.524 mm), nominal.
4. Tensile Strength, min (psi): 1600 (11.0 Mpa)
5. Tear Resistance, min (lbf/in): 200 (35.0 kN/m)

2.3 AUXILIARY MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.
 1. Liquid-type auxiliary materials shall meet VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as sheet membrane.
- C. Bonding Adhesive: Manufacturer's standard bonding adhesive for membrane, and solvent-based bonding adhesive for base flashings.
- D. Seaming Material: Manufacturer's standard synthetic-rubber polymer primer and 3-inch-wide minimum with cover strip or 6-inch-wide, butyl splice tape with release film.
- E. Lap Sealant: Manufacturer's standard single-component sealant, color to match roofing membrane.
- F. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.
- G. Metal Termination Bars: Manufacturer's standard predrilled stainless steel or aluminum bars, approximately 1 by 1/8-inch-thick; with anchors.
- H. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane to the cover board, and acceptable to membrane roofing system manufacturer. Adhere to FMG Class 90 Wind Uplift Requirements.
- I. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, termination reglets, cover strips, and other accessories.
- J. Metal Batten Strip: Manufacturer's standard predrilled hot dipped galvanized steel or aluminum bars, approximately 1" in width, with anchors.

2.4 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured rubber walkway pads or rolls acceptable to membrane roofing system manufacturer.

2.5 RELATED MATERIALS

- A. Roof Insulation: See Section 07 220 – ROOF DECK AND INSULATION

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Comply with the manufacturer's published instructions for the installation of the membrane roofing system including proper substrate preparation, jobsite considerations and weather restrictions.
- B. Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.

3.2 EXAMINATION

- A. Verify that deck surfaces and project conditions are ready to receive work of this section.
- B. Verify that deck is supported and adequately secured to structural members. Additional securement should be added where necessary.
- C. Verify that deck is clean and smooth, free of depressions, projections or ripples, and is properly sloped to drains.
- D. Verify that adjacent roof members do not vary more than [1/4] inch in height.
- E. Verify that deck surfaces are dry and free of snow or ice.
- F. Confirm that moisture content does not exceed twelve (12) percent by moisture meter tests.
- G. Verify that openings, curbs, pipes, conduit, sleeves, ducts, and other items, which penetrate the roof, are set solidly, and that pressure treated wood cant strips and pressure treated wood nailing strips are set in place.

3.3 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.4 INSULATION INSTALLATION

- A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.
- B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Installation Over Concrete Decks:
 - 1. Install base layer of insulation with joints staggered not less than 24 inches (610 mm) in adjacent rows.
 - a. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 - b. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
 - c. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).
 - 1) Trim insulation so that water flow is unrestricted.
 - e. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
 - f. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
 - h. Adhere base layer of insulation to concrete roof deck according to FM Approvals' RoofNav listed roof assembly requirements for specified Windstorm Resistance Classification and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
 - 1) Prime surface of concrete deck with asphalt primer at rate of 3/4 gal./100 sq. ft. (0.3 L/sq. m), and allow primer to dry.
 - 2) Set insulation in a solid mopping of hot roofing asphalt, applied within plus or minus 25 deg F (14 deg C) of equiviscous temperature.
 - 3) Set insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

3.5 MEMBRANE PLACEMENT AND BONDING (FULLY ADHERED SYSTEM)

- A. After making sure the sheet is placed in its final position allowing for the minimum lap width per manufacturer specifications, fold it back evenly onto itself without wrinkles to expose the mating surface of the sheet.
- B. Sweep the mating surfaces with a stiff broom to remove any dusting agent or dirt that may have accumulated.
- C. Apply bonding adhesive with either a 9" (229 mm) wide solvent-resistant paint roller, power roller or a commercial-grade adhesive sprayer. Adhesive must be

applied in a relatively uniform thickness to both surfaces at approximately the same time. If adhesive is spray-applied, it must be back-rolled with a paint roller to assure proper contact and uniform coverage. Refer to Manufacturer's Technical Information Sheets and container labels for specific application instructions and information on spray equipment.

- D. Apply bonding adhesive at specified coverage rate refer to the container label and Technical Information Sheet for specific application requirements and coverage rates.
- E. Allow the bonding adhesive to flash-off. Touch the adhesive surface in several places with a clean, dry finger to be certain that the adhesive does not stick or string. As you are touching the adhesive, push forward on the adhesive at an angle to ensure that the adhesive is ready throughout its thickness. If either motion exposes wet or stringy adhesive when the finger is lifted, the adhesive is not ready for mating. Flash-off time will vary depending on ambient conditions of temperature and humidity.
- F. Starting at the fold, roll the previously coated portion of the membrane into the coated substrate slowly and evenly to prevent wrinkles. Broom the membrane to assure proper contact, compress the bonded half of the membrane to the substrate with a stiff push broom.
- G. Complete the membrane installation fold the un-adhered half of the membrane back onto itself, and repeat the procedure as necessary until all EDPM is adhered.

3.6 FLASHING

- A. Wall and curb flashing shall be semi-cured EPDM membrane. Continue the deck membrane as wall flashing where practicable. Use Pressure-Sensitive Curb Wrap when possible to flash curb units.
- B. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.
- C. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- D. Apply solvent-based bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.
- E. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- F. Clean splice areas, apply splicing cement (except for heat-welded application), and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.
- G. Terminate and seal top of sheet flashings.

3.7 WALKWAYS

- A. Flexible Walkways: Install walkway products in locations indicated. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.8 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified independent testing and inspecting agency to perform roof tests and inspections and to prepare test reports.
- B. Manufacturer's Technical Representative: Engage a qualified manufacturer's technical representative to perform roof tests and inspections and to prepare test reports.
- C. Final Roof Inspection: Engage roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Architect.
 - a. Notify Architect and the Engineer 48 hours in advance of date and time of inspection.
- D. Repair or remove and replace components of membrane roofing system where test results or inspections indicate that they do not comply with specified requirements.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.9 PROTECTING AND CLEANING

- A. Protect membrane-roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and the Engineer.
- B. Correct deficiencies in or remove membrane-roofing system that does not comply with requirements, repair substrates, and repair or reinstall membrane-roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.10 FINAL INSPECTION

- A. At completion of roofing installation and associated work, meet with Contractor, Architect, installer, installer of associated work, Engineer, roofing system manufacturer's representative, and other representatives directly concerned with performance of roofing system.

- B. Walk roof surface areas of the building, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. List all items requiring correction or completion and furnish copy of list to each party in attendance.
- C. The roofing system manufacturer reserves the right to request a thermographic scan of the roof during final inspection to determine if any damp or wet materials have been installed. The thermographic scan shall be provided by the [Roofing] Contractor.
- D. If core cuts verify the presence of damp or wet materials, the [Roofing] Contractor shall be required to replace the damaged areas at his own expense.
- E. Repair or replace deteriorated or defective work found at time above inspection as required to produce an installation which is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- F. Notify the Architect and Engineer upon completion of corrections.
- G. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.
- H. A wind uplift test per Data Sheet 1-52 shall be conducted to ensure proper adhesion once adhesive has cured.

END OF SECTION

SECTION 07 7100
ROOF SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
1. Copings.
 2. Roof-edge specialties.
 3. Roof-edge drainage systems.
 4. Reglets and counterflashings.
- B. Related Requirements:
1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For roof specialties.
1. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work.
 2. Include details for expansion and contraction; locations of expansion joints, including direction of expansion and contraction.
 3. Indicate profile and pattern of seams and layout of fasteners, cleats, clips, and other attachments.
 4. Detail termination points and assemblies, including fixed points.
 5. Include details of special conditions.

- C. Samples: For each type of roof specialty and for each color and texture specified.
- D. Samples for Initial Selection: For each type of roof specialty indicated with factory-applied color finishes.
- E. Samples for Verification:
 - 1. Include Samples of each type of roof specialty to verify finish and color selection, in manufacturer's standard sizes.
 - 2. Include copings and roof-edge flashing made from 12-inch (300-mm) lengths of full-size components in specified material, and including fasteners, cover joints, accessories, and attachments.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer.
- B. Product Certificates: For each type of roof specialty.
- C. Product Test Reports: For copings and roof-edge flashings, for tests performed by a qualified testing agency.
- D. Sample Warranty: For manufacturer's special warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing specialties to include in maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are FM Approvals listed for specified class.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage. Store roof specialties away from uncured concrete and masonry.
- B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof-specialty installation.

1.8 FIELD CONDITIONS

- A. Field Measurements: Verify profiles and tolerances of roof-specialty substrates by field measurements before fabrication, and indicate measurements on Shop Drawings.

- B. Coordination: Coordinate roof specialties with flashing, trim, and construction of parapets, roof deck, roof and wall panels, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.9 WARRANTY

- A. Roofing-System Warranty: Roof specialties are included in warranty provisions in Section 07 5323 "ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING."
- B. Special Warranty on Painted Finishes: Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Delta E units when tested according to ASTM D2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: Twenty (20) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
- B. FM Approvals' Listing: Manufacture and install copings and roof-edge specialties that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-90. Identify materials with FM Approvals' markings.
- C. SPRI Wind Design Standard: Manufacture and install copings and roof-edge specialties tested according to SPRI ES-1 and capable of resisting the following design pressures:
 - 1. Design Pressure: As indicated on Drawings.

- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 COPINGS

- A. Metal Copings: Manufactured coping system consisting of metal coping cap in section lengths not exceeding 12 feet (3.6 m), concealed anchorage; with corner units, end cap units, and concealed splice plates with finish matching coping caps.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. ATAS International, Inc.
 - b. Castle Metal Products.
 - c. Drexel Metals; Carlisle Construction Materials.
 - d. Merchant and Evans.
 - e. PAC-CLAD; Petersen Aluminum Corporation; a Carlisle company.
 2. Metallic-Coated Steel Sheet Fascia Covers: Zinc-coated (galvanized) steel, 0.034-inch (0.86-mm) thickness.
 - a. Surface: Smooth, flat finish.
 - b. Finish: Three-coat fluoropolymer.
 - c. Color: As selected by Architect from manufacturer's full range.
 3. Corners: Factory mitered and continuously welded.
 4. Special Fabrications: Two-way sloped coping cap.
 5. Coping-Cap Attachment Method: Face leg hooked to continuous cleat with back leg fastener exposed, fabricated from coping-cap material.
 - a. Face-Leg Cleats: Concealed, continuous galvanized-steel sheet.

2.3 ROOF-EDGE SPECIALTIES

- A. Roof-Edge Fascia: Manufactured, two-piece, roof-edge fascia consisting of snap-on metal fascia cover in section lengths not exceeding 12 feet (3.6 m) and a continuous metal receiver with integral drip-edge cleat to engage fascia cover and secure single-ply roof membrane. Provide matching corner units.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. ATAS International, Inc.
 - b. Drexel Metals; Carlisle Construction Materials.
 - c. OMG, Inc.
 2. Metallic-Coated Steel Sheet Fascia Covers: Zinc-coated (galvanized) steel, nominal 0.034-inch (0.86-mm) thickness.
 - a. Surface: Smooth, flat finish.
 - b. Finish: Three-coat fluoropolymer.
 - c. Color: As selected by Architect from manufacturer's full range.
 3. Corners: Factory mitered and continuously welded.
 4. Splice Plates: Concealed, of same material, finish, and shape as fascia cover.
 5. Receiver: Manufacturer's standard material and thickness.
 6. Special Fabrications: Stepped fascia cover.
- B. Parapet Scuppers: Manufactured with closure flange trim to exterior, 4-inch- (100-mm-) wide wall flanges to interior, and base extending 4 inches (100 mm) beyond cant or tapered strip into field of roof.
1. Zinc-Coated Steel: Nominal .0028-inch (0.71-mm) thickness.
- C. Zinc-Coated Steel Finish: Three-coat fluoropolymer.
1. Color: As selected by Architect from manufacturer's full range.

2.4 REGLETS AND COUNTERFLASHINGS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
1. Castle Metal Products.
 2. Cheney Flashing Company.
 3. Drexel Metals; Carlisle Construction Materials.
 4. Fry Reglet Corporation.
 5. Keystone Flashing Company, Inc.
- B. Reglets: Manufactured units formed to provide secure interlocking of separate reglet and counterflashing pieces, from the following exposed metal:
1. Zinc-Coated Steel: Nominal 0.028-inch (0.71-mm) thickness.
 2. Corners: Factory mitered and continuously welded.

3. Surface-Mounted Type: Provide reglets with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
- C. Zinc-Coated Steel Finish: Three-coat fluoropolymer.
1. Color: As selected by Architect from manufacturer's full range.

2.5 MATERIALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M, G90 (Z275) coating designation.

2.6 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet: Minimum 30 to 40 mils (0.76 to 1.0 mm) thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Carlisle WIP Products; a brand of Carlisle Construction Materials.
 - b. Owens Corning.
 - c. Polyglass U.S.A., Inc.
 2. Thermal Stability: ASTM D1970/D1970M; stable after testing at 240 deg F (116 deg C).
 3. Low-Temperature Flexibility: ASTM D1970/D1970M; passes after testing at minus 20 deg F (29 deg C).
- B. Felt: ASTM D226/D226M, Type II (No. 30), asphalt-saturated organic felt, nonperforated.
- C. Slip Sheet: Rosin-sized building paper, 3-lb/100 sq. ft. (0.16-kq/sq. m) minimum.

2.7 MISCELLANEOUS MATERIALS

- A. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:
1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
 2. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hot-dip zinc-coated steel according to ASTM A153/A153M or ASTM F2329.

- B. Elastomeric Sealant: ASTM C920, elastomeric **polyurethane** polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.
- C. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type joints with limited movement.
- D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.
- E. Asphalt Roofing Cement: ASTM D4586, asbestos free, of consistency required for application.

2.8 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- D. Coil-Coated Galvanized-Steel Sheet Finishes:
 - 1. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with ASTM A755/A755M and coating and resin manufacturers' written instructions.
 - a. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - b. Concealed Surface Finish: Apply pretreatment and manufacturer's standard acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of **0.5 mil (0.013 mm)**.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Examine walls, roof edges, and parapets for suitable conditions for roof specialties.

- C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage where applicable, and securely anchored.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF UNDERLAYMENT

- A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches (152 mm) staggered 24 inches (610 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps with roller. Cover underlayment within 14 days.
 - 1. Apply continuously under copings, roof-edge specialties, reglets and counterflashings.
 - 2. Coordinate application of self-adhering sheet underlayment under roof specialties with requirements for continuity with adjacent air barrier materials.
- B. Felt Underlayment: Install with adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches (50 mm).
- C. Slip Sheet: Install with tape or adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches (50 mm).

3.3 INSTALLATION, GENERAL

- A. Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof-specialty systems.
 - 1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
 - 2. Provide uniform, neat seams with minimum exposure of solder and sealant.
 - 3. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
 - 4. Torch cutting of roof specialties is not permitted.
 - 5. Do not use graphite pencils to mark metal surfaces.

- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
 - 1. Coat concealed side of uncoated aluminum and stainless steel roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
 - 2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.
- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
 - 1. Space movement joints at a maximum of 12 feet (3.6 m) with no joints within 18 inches (450 mm) of corners or intersections unless otherwise indicated on Drawings.
 - 2. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
- D. Fastener Sizes: Use fasteners of sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Seal concealed joints with butyl sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for weathertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F (4 deg C).

3.4 INSTALLATION OF COPINGS

- A. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor copings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.
 - 1. Interlock face and back leg drip edges of snap-on coping cap into cleated anchor plates anchored to substrate at manufacturer's required spacing that meets performance requirements.
 - 2. Interlock face-leg drip edge into continuous cleat anchored to substrate at manufacturer's required spacing that meets performance requirements. Anchor back leg of coping with screw fasteners and elastomeric washers at manufacturer's required spacing that meets performance requirements.

3.5 INSTALLATION OF ROOF-EDGE SPECIALTIES

- A. Install cleats, cants, and other anchoring and attachment accessories and devices with concealed fasteners.

- B. Anchor roof edgings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.

3.6 INSTALLATION OF ROOF-EDGE DRAINAGE-SYSTEM

- A. Install components to produce a complete roof-edge drainage system according to manufacturer's written instructions. Coordinate installation of roof perimeter flashing with installation of roof-edge drainage system.
- B. Parapet Scuppers: Install scuppers through parapet where indicated. Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.
 - 1. Anchor scupper closure trim flange to exterior wall and seal or solder to scupper.
 - 2. Loosely lock front edge of scupper with conductor head.

3.7 INSTALLATION OF REGLETS AND COUNTERFLASHINGS

- A. Coordinate installation of reglets and counterflashings with installation of base flashings.
- B. Surface-Mounted Reglets: Install reglets to receive flashings where flashing without embedded reglets is indicated on Drawings. Install at height so that inserted counterflashings overlap 4 inches (100 mm) over top edge of base flashings.
- C. Counterflashings: Insert counterflashings into reglets or other indicated receivers; ensure that counterflashings overlap 4 inches (100 mm) over top edge of base flashings. Lap counterflashing joints a minimum of 4 inches (100 mm) and bed with butyl sealant. Fit counterflashings tightly to base flashings.

3.8 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.
- D. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION