

**PROJECT MANUAL**

**ROBBINS LIBRARY  
EXTERIOR ENVELOPE REPAIRS –  
PHASE 1A  
ARLINGTON, MASSACHUSETTS**

**TOWN OF ARLINGTON**

**Bid No. 19-58**

**Bid Documents**

November, 06 2019

**CBI Consulting, LLC**

**A Vidaris Company**

**250 Dorchester Avenue**

**Boston, Massachusetts 02127**

**Tel (617) 268-8977**

**Fax (617) 464-2971**

CBI JOB NUMBER: 17152-A

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**REQUEST FOR PROPOSAL  
(RFP)**

Sealed Proposals for construction of:

**Robbins Library**  
**Exterior Envelope Repairs Phase 1A – Bid No. 19-58**  
Arlington, MA.

in accordance with RFP Documents prepared by:

**CBI Consulting LLC**, A Vidaris Company  
250 Dorchester Avenue  
Boston, MA 02127

hereinafter called the Architect, will be received by:

**Town of Arlington**  
acting by and thorough its  
**Town Manager: Mr. Adam Chapdelaine**

hereinafter called the "Awarding Authority", or "Owner" at:

**Purchasing Department**  
Town Hall Annex  
730 Massachusetts Ave.  
Arlington, MA 02476  
Attention: Town Manager Mr. Adam Chapdelaine

Proposals shall be received by the Awarding Authority at the address listed above, no later than

**2:00 PM, local legal time, December 5, 2019.**

at which times and place they will be publicly opened and forthwith read aloud. Any proposal received after the time and date specified will not be considered.

The Awarding Authority will reject proposals when required to do so by the applicable Massachusetts General Laws. In addition, the Awarding Authority reserves the right to waive any informalities in RFP solicitation process and to reject any and all Proposals if it deems to be in the public interest to do so. Also, the Awarding Authority reserves the right to reject any proposal if it determines that such proposal does not represent the proposal of a person or firm competent to perform the work as specified, or if less than three proposals are received, or if proposed prices are not acceptable without further competition.

Wages and contributions to be paid employees on the Project shall not be less than those established by a schedule issued by the Commissioner of the Department of Labor and Workforce Development of the Commonwealth of Massachusetts, in accordance with MGL c.149, §§ 26 to 27H inclusive, a copy of which is included in the Contract Documents, and shall be made a part of the Contract.

RFP Documents may also be examined during regular office hours at the Architect's office free of charge.

The Awarding Authority is exempt from sales and federal excise tax to the extent permitted under law; Proposers should not include such taxes in figuring or in references to any Proposal.

A Pre-Proposal site visit will be held by the Awarding Authority at 9:00 AM, local legal time, on November 12, 2019 at the Robbins Library, 700 Massachusetts Avenue, MA 02476. All Proposers are invited to attend.

Commonwealth of Massachusetts General Laws are incorporated herein by reference. Any inconsistency between the RFP, Instructions to Proposers, Proposal Forms, Conditions of the Contract, and any other RFP Documents and these statutes, or any other applicable statutes, bylaws, or regulations existing on the date on which the Proposals are to be received, shall not be grounds for invalidating the proposal solicitation procedures, but, where required by law, such statute, bylaw, or regulation shall be deemed to govern.

**TOWN OF ARLINGTON**  
**acting through and by its**  
**TOWN MANAGER**

## INSTRUCTIONS TO PROPOSERS

### 1.00 COMPLEMENTARY DOCUMENT

- A. Request for Proposal, included herewith, is complementary to this document and shall be carefully reviewed by Proposers for specific instructions which are not repeated herein.

### 2.00 STATUTES REGULATING COMPETITIVE PROPOSAL SOLICITATION

- A. Proposal solicitation procedures and award of contract shall be in accordance with the General Laws of the Commonwealth of Massachusetts, including all current amendments.
- B. In the event of any discrepancy or inconsistency between the provisions of these Instructions to Proposers and RFP Documents and the above-mentioned statutes, the provisions of the above-mentioned statutes shall govern. In such event, the application of all remaining provisions not in conflict to any circumstance other than that in which the conflict occurs shall not be affected thereby.

### 3.00 PROPOSER'S QUALIFICATIONS

- A. No individual or firm may submit a Proposal unless it includes, in the Proposal Form, a list of at least **Three** (3) references of similar projects completed in the last **Five** (5) years.
- B. The Awarding Authority will reject Proposals when required to do so by the above-referenced General Laws. In addition, the Awarding Authority reserves the right to waive any informalities in proposal solicitation and to reject any and all Proposals if it deems to be in the public interest to do so. Also, the Awarding Authority reserves the right to reject any Proposal if it determines that such Proposal does not represent the Proposal of a person or firm competent to perform the work as specified, or if less than three Proposals are received, or if proposed prices are not acceptable without further competition.

### 4.00 INTERPRETATION OF DOCUMENTS: NOTIFICATION OF ERRORS

- A. Interpretation of the provisions of the RFP Documents will be made by the Architect upon written request of any Proposer, provided that such request is received by the Architect at least seven (7) days prior to date of applicable proposal opening, and that the Architect considers such interpretation to be of sufficient importance. Oral or telephone interpretations will not generally be made, and if made, shall be strictly informal and not legally valid or binding.
- B. Architect's interpretations shall be in the form of Addenda to the RFP Documents.
- C. Proposers are urged to communicate all errors or discrepancies found in the RFP Documents to the Architect. Telephone calls pointing out any such errors or discrepancies will be taken by the Architect, but only for the purpose of receiving the information in order that it may be properly processed, and not for interpretation or clarification.

### 5.00 EXAMINATION OF RFP DOCUMENTS AND SITE

- A. Each Proposer shall carefully examine the RFP Documents to obtain a thorough understanding of the work of his Proposal in addition to work of related trades. In addition, each Proposer shall personally visit the site to become thoroughly acquainted with the conditions as they exist thereon.

- B. Failure of any Proposer to thoroughly examine the RFP Documents or to visit and examine the site shall in no way relieve the Proposer of any obligation with respect to his Proposal or of any responsibility assigned the Proposer under the Contract.
- 6.00 PRE-PROPOSAL SITE VISIT
- A. Pre-Proposal site visit will be held at location and time stipulated in the Request for Proposal.
- 7.00 MODIFICATION AND WITHDRAWAL OF PROPOSALS
- A. Modifications of Proposals will be permitted after submission of such Proposals provided clearly written, readily understandable instructions for same are received by the Awarding Authority in writing prior to time established for opening of such Proposals.
  - B. No Proposal may be withdrawn for a period of **30** days, excluding Saturdays, Sundays and legal holidays, after actual date of the Proposal opening.
- 8.00 ADDENDA
- A. Addenda may be required during the proposal solicitation period to modify, clarify, or interpret the RFP Documents. It is intended, but not guaranteed, that such Addenda shall be posted on Town's web site or e-mailed by the Architect to all persons or parties to whom RFP Documents have been issued (Proposers of Record). Failure to receive such Addenda shall in no way relieve any Proposer from the execution of its provisions. All Proposers are cautioned to verify the number of Addenda that have been issued and to secure any needed copies from the Architect before submitting a Proposal.
- 9.00 PROPOSAL FORM
- A. The Awarding Authority will make available to every person applying therefor, a Proposal Form. Each bona fide Proposer will be furnished a form for his proposal upon request. Such form will be made available at the Office of the Architect during regular office hours throughout the proposal solicitation period. Proposals must be submitted on the form provided by the Awarding Authority or on form included in the RFP documents of the Project Manual.
  - B. All blank spaces provided on the Proposal Form shall be filled in with ink or typewritten. Where space is provided, sums shall be expressed in both words and figures. In case of discrepancy between the two, the written words shall govern.
  - C. No interlineations, additions, alterations, or erasures shall be made on the forms.
  - D. The Awarding Authority is exempt from sales and federal excise tax to the extent permitted under law; Proposers should not include such taxes in figuring or in references to any Proposal.
- 10.01 UNIT PRICES
- A. Unit prices are included in this bid. Refer to Specification Section 01 22 00 – UNIT PRICES a list of unit price items.
- 10.02 ALTERNATES
- A. Deduct Alternates are included in this bid. Refer to Specification Section 01 23 00 – ALTERNATES for a list of deduct alternates items.

11.00 SUBMISSION OF PROPOSALS

- A. The **Proposal Form** shall be properly executed and enclosed in a sealed envelope. Sealed envelope shall be plainly marked on the outside with the following information:

PROPOSAL FOR: **Robbins Library**  
**Exterior Envelope Repairs Phase 1A - Bid No. 19-58**  
Arlington,  
MA.

SUBMITTED BY: \_\_\_\_\_  
(Name of Proposer)

\_\_\_\_\_  
(Address of  
Proposer)

- B. If a Proposal is mailed, the above-required envelope shall be enclosed in a second envelope identified with the above markings and mailed to the place of Proposal opening, as stipulated in the Request for Proposal. Mailed Proposals must be received before time scheduled for opening of Proposals.

12.00 PAYMENT BONDS [Not Applicable.]

13.00 FOREIGN CORPORATIONS

- A. The attention of Proposers is called to the General Laws, Chapter 30, Section 39L, as amended by The Acts of 1967, Chapter 3, under which the Awarding Authority may not enter into a contract with a foreign corporation (a corporation not organized under the Laws of Massachusetts), nor approve a foreign corporation as a contractor, unless the foreign corporation has filed with the Awarding Authority a certificate by the State Secretary stating that the foreign corporation has complied with General Laws, Chapter 181, Sections 3 and 5, and stating the date of such compliance.

14.00 AWARD OF CONTRACT

- A. The Contract will be awarded to the lowest responsible, competent and eligible Proposer except in the event of substitution as provided under Chapter 149, Sections 44E and 44F of the above-referenced General Laws.

15.00 COMMENCEMENT AND COMPLETION OF WORK

- A. The successful Proposer, upon execution of the Contract Agreement, which may constitute as Notice to Proceed unless specifically indicated by Awarding Authority otherwise, shall commence the work of the Contract within seven (7) calendar days. Thereafter the Contractor shall diligently and continuously carry on the work in such manner as to substantially complete the work of on or before the date as stipulated in Division 01 Section "Town of Arlington General Contract".

16.00 LIQUIDATED DAMAGES

- A. Liquidated damages for not completing the work within the time limit specified above will be assessed by the Owner. Liquidated damages will be in the amount as stipulated in "Town of Arlington General Contract". The liquidated damages amount per calendar day is a minimum damage figure to compensate the Owner for administrative costs and loss or delay of its use of the project, and for added Owner's



Project Manager, Architect and consultant fees, and does not limit in any way the liability of the Contractor for damages in excess of the specified liquidated damages amount for other damages, in particular, damages for breach of Contract. It is expressly understood that such liquidated damages do not constitute a penalty.

**END OF  
DOCUMENT**

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**PROPOSAL FORM**

TO THE AWARDING AUTHORITY:

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

**Robbins Library**  
**Exterior Envelope Repairs Phase 1A - Bid No. 19-58**  
 Arlington, MA

in accordance with accompanying Plans and Specifications prepared by the Architect

**CBI Consulting LLC**, A Vidaris Company  
 250 Dorchester Avenue  
 Boston, MA 02127

for the Contract Price specified below, subject to additions and deductions according to the terms of the Specifications.

B. This Proposal includes Addenda numbered: \_\_\_\_\_

C. The proposed Contract Price is:  
 \_\_\_\_\_  
 Dollars.  
 (\$ \_\_\_\_\_).

D. UNIT PRICES

#	DESCRIPTION OF WORK	UNIT	BASE BID QUANTITY	ADD / DEDUCT PRICE (Insert only one number)
1.	Route and clean existing cracks in any sandstone (1890's building) detail or element, and fill cracks with injection restoration repair mortar.	LF	50	\$ _____
2.	Route and clean existing cracks in any Architectural cast stone (1930's building) detail or element, and fill cracks with injection restoration repair mortar.	LF	25	\$ _____
3.	Remove and dispose of existing Architectural cast stone window head in two (2) location as selected by the Architect. Temporarily shore and support opening, fabricate and install new reinforced Architectural precast header to match size, texture and color.	EA	2	\$ _____
4.	Cut out and dispose of spalls, chips and delamination's in the existing Architectural Cast Stone (1930's Building) window sills. Cut out a minimum 1/2" deep & square off all edges.	CI	208	\$ _____

D. ALTERNATES

#	DESCRIPTION OF WORK	SUBTRACT
1.	<u>Deduct Alternate No. 1</u> – Eliminate all repair work associated to Entry/Exit stairs of the 1930's Building, including replacing the existing sealant and mortar joints.	\$ _____
2.	<u>Deduct Alternate No. 2</u> – Eliminate all work associated to reseal the existing aluminum spandrel panels for the 1990's building.	\$ _____
3.	<u>Deduct Alternate No. 3</u> – Eliminate two (2) locations of work associated with replacing Architectural cast stone window heads.	\$ _____

E. The undersigned offers the following information as evidence of his qualifications to perform the work as proposed upon according to all the requirements of the Contract Documents:

1. Have been in business under present business name for \_\_\_\_\_ years.
2. Ever failed to complete any work awarded? \_\_\_\_\_.
3. List **three** (3) separate Owner references for projects completed in the past **five** (5) years on which you served as contractor for work of similar character as required for this project:

<u>Project</u>	<u>Owner Ref. Name</u>	<u>Telephone No.</u>	<u>Amount of Contract</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

4. Bank Reference: \_\_\_\_\_.

E. **The undersigned hereby certifies, under the pains and penalties of perjury, that he has carefully examined the Contract Documents, established a thorough understanding of the existing conditions, and has obtained sufficient information for executing the work of his Proposal and the work of all related trades.**

F. The undersigned agrees that, if selected as Contractor, he will within five (5) days, Saturdays, Sundays, and legal holidays excluded, after presentation thereof by the Awarding Authority, execute the Contract in accordance with the terms of this Proposal.

G. The undersigned hereby certifies that he is able to furnish labor that can work in harmony with Owner's separate contractor(s) and all other elements of labor employed or to be employed on the work and that he/she will comply fully with all laws and regulations applicable to awards made subject to MGL c.149, § 44A.

H. The undersigned Proposer hereby certifies, under the pains and penalties of perjury, the foregoing Proposal 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 Workforce Development. The undersigned Proposer agrees to indemnify 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 if (1) the failure of the said Proposal to be based upon the payment of the said applicable prevailing wages rates or (2) the failure of the Proposer, if selected as the contractor, to pay laborers employed on the project the said applicable prevailing wage rates.

I. The undersigned hereby certifies that all employees to be employed at the worksite shall have successfully completed a course in construction safety and health approved by the **OSHA** that 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.

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

K. The undersigned further certifies under penalties of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of Section 29F of Chapter 29, or any other applicable debarment provisions of any chapter of the General Laws or any rule or regulation promulgated thereunder.

Date: \_\_\_\_\_  
(Name of Proposer)

Signed: \_\_\_\_\_

(Seal) By: \_\_\_\_\_  
(Print Name and Title of Person Signing Proposal)

\_\_\_\_\_  
(Business Address)

\_\_\_\_\_  
(City and State)

\_\_\_\_\_  
(Business Telephone Number)

To view and print Weekly Payroll & Statement of Compliance Forms, click on [www.mass.gov/dols/pw](http://www.mass.gov/dols/pw).

PLEASE NOTE: The attached Prevailing Wage Schedule is valid for 90 days. An Awarding Authority should re-request an up to date Prevailing Wage Schedule if it has NOT opened bids or selected a contractor within 90 days of the issuance date of the attached prevailing wage schedule.

\*For MULTI-YEAR projects bid on or after 8/8/08, Awarding Authorities must request an Annual Update to this Prevailing Wage Schedule each year for the duration of the project, no later than two weeks before the anniversary date of the execution of the general contract. Annual updates are not required for projects that last LESS THAN ONE YEAR.

\*For CM AT RISK projects (bid pursuant to GL c.149A), Awarding Authorities must request a Prevailing Wage Schedule NOT sooner than 90-days before the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work.

\*For MULTI-YEAR CM AT RISK projects, Awarding Authorities must request an Annual Update to this Prevailing Wage Schedule each year for the duration of the project, no later than two weeks before the anniversary date, which is the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to procure construction scopes of work.

Apprentice wages (expressed as dollar figures) and the required benefits are listed on the Prevailing Wage Schedule. For further details, please see opinion letter PW-2010-03-03.16.10 (dated March 18, 2010) at [www.mass.gov/dols/pw](http://www.mass.gov/dols/pw).

Request Prevailing Wage Rates online at: [www.mass.gov/dols/pw](http://www.mass.gov/dols/pw).

THIS IS A SYSTEM-GENERATED EMAIL. PLEASE DO NOT REPLY TO THIS EMAIL. TO CONTACT DLS REGARDING PREVAILING WAGE MATTERS, CALL 617-626-6953.

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APPROVAL/DENIAL COMMENTS



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

**Prevailing Wage Rates**

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

CHARLES D. BAKER  
Governor

ROSALIN ACOSTA  
Secretary

KARYN E. POLITO  
Lt. Governor

WILLIAM D MCKINNEY  
Director

**Awarding Authority:** Town of Arlington  
**Contract Number:** 19-58 **City/Town:** ARLINGTON  
**Description of Work:** Robbins Library Exterior Envelope Repairs / Phase 1A Includes masonry crack and spall repair, mortar repointing, cast stone replacement, sealant removal and replacement  
**Job Location:** 700 Massachusetts Ave

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Construction</b>						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	08/01/2019	\$35.35	\$12.41	\$12.70	\$0.00	\$60.46
	12/01/2019	\$35.35	\$12.41	\$13.72	\$0.00	\$61.48
	06/01/2020	\$36.25	\$12.41	\$13.72	\$0.00	\$62.38
	08/01/2020	\$36.25	\$12.91	\$13.72	\$0.00	\$62.88
	12/01/2020	\$36.25	\$12.91	\$14.82	\$0.00	\$63.98
	06/01/2021	\$37.05	\$12.91	\$14.82	\$0.00	\$64.78
	08/01/2021	\$37.05	\$13.41	\$14.82	\$0.00	\$65.28
	12/01/2021	\$37.05	\$13.41	\$16.01	\$0.00	\$66.47
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	08/01/2019	\$35.42	\$12.41	\$12.70	\$0.00	\$60.53
	12/01/2019	\$35.42	\$12.41	\$13.72	\$0.00	\$61.55
	06/01/2020	\$36.32	\$12.41	\$13.72	\$0.00	\$62.45
	08/01/2020	\$36.32	\$12.91	\$13.72	\$0.00	\$62.95
	12/01/2020	\$36.32	\$12.91	\$14.82	\$0.00	\$64.05
	06/01/2021	\$37.12	\$12.91	\$14.82	\$0.00	\$64.85
	08/01/2021	\$37.12	\$13.41	\$14.82	\$0.00	\$65.35
	12/01/2021	\$37.12	\$13.41	\$16.01	\$0.00	\$66.54
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	08/01/2019	\$35.54	\$12.41	\$12.70	\$0.00	\$60.65
	12/01/2019	\$35.54	\$12.41	\$13.72	\$0.00	\$61.67
	06/01/2020	\$36.44	\$12.41	\$13.72	\$0.00	\$62.57
	08/01/2020	\$36.44	\$12.91	\$13.72	\$0.00	\$63.07
	12/01/2020	\$36.44	\$12.91	\$14.82	\$0.00	\$64.17
	06/01/2021	\$37.24	\$12.91	\$14.82	\$0.00	\$64.97
	08/01/2021	\$37.24	\$13.41	\$14.82	\$0.00	\$65.47
	12/01/2021	\$37.24	\$13.41	\$16.01	\$0.00	\$66.66
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2019	\$102.78	\$9.90	\$21.15	\$0.00	\$133.83
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.90	\$7.85	\$15.85	\$0.00	\$63.60
	12/01/2019	\$40.90	\$7.85	\$15.85	\$0.00	\$64.60
	06/01/2020	\$41.89	\$7.85	\$15.85	\$0.00	\$65.59
	12/01/2020	\$42.87	\$7.85	\$15.85	\$0.00	\$66.57
	06/01/2021	\$43.89	\$7.85	\$15.85	\$0.00	\$67.59
	12/01/2021	\$44.90	\$7.85	\$15.85	\$0.00	\$68.60
For apprentice rates see "Apprentice- LABORER"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT &amp; FROST INSULATORS LOCAL 6 (BOSTON)</i>	06/01/2019	\$36.00	\$12.50	\$8.85	\$0.00	\$57.35
	12/01/2019	\$37.00	\$12.50	\$8.85	\$0.00	\$58.35
	06/01/2020	\$38.00	\$12.50	\$8.85	\$0.00	\$59.35
	12/01/2020	\$39.00	\$12.50	\$8.85	\$0.00	\$60.35
ASPHALT RAKER <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.40	\$7.85	\$15.85	\$0.00	\$63.10
	12/01/2019	\$40.40	\$7.85	\$15.85	\$0.00	\$64.10
	06/01/2020	\$41.39	\$7.85	\$15.85	\$0.00	\$65.09
	12/01/2020	\$42.37	\$7.85	\$15.85	\$0.00	\$66.07
	06/01/2021	\$43.39	\$7.85	\$15.85	\$0.00	\$67.09
	12/01/2021	\$44.40	\$7.85	\$15.85	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER"						

<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$48.18	\$12.00	\$15.60	\$0.00	\$75.78
	12/01/2019	\$49.33	\$12.00	\$15.60	\$0.00	\$76.93
	06/01/2020	\$50.43	\$12.00	\$15.60	\$0.00	\$78.03
	12/01/2020	\$51.58	\$12.00	\$15.60	\$0.00	\$79.18
	06/01/2021	\$52.68	\$12.00	\$15.60	\$0.00	\$80.28
	12/01/2021	\$53.83	\$12.00	\$15.60	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$48.18	\$12.00	\$15.60	\$0.00	\$75.78
	12/01/2019	\$49.33	\$12.00	\$15.60	\$0.00	\$76.93
	06/01/2020	\$50.43	\$12.00	\$15.60	\$0.00	\$78.03
	12/01/2020	\$51.58	\$12.00	\$15.60	\$0.00	\$79.18
	06/01/2021	\$52.68	\$12.00	\$15.60	\$0.00	\$80.28
	12/01/2021	\$53.83	\$12.00	\$15.60	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.40	\$7.85	\$15.85	\$0.00	\$63.10
	12/01/2019	\$40.40	\$7.85	\$15.85	\$0.00	\$64.10
	06/01/2020	\$41.39	\$7.85	\$15.85	\$0.00	\$65.09
	12/01/2020	\$42.37	\$7.85	\$15.85	\$0.00	\$66.07
	06/01/2021	\$43.39	\$7.85	\$15.85	\$0.00	\$67.09
	12/01/2021	\$44.40	\$7.85	\$15.85	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.90	\$7.85	\$15.85	\$0.00	\$63.60
	12/01/2019	\$40.90	\$7.85	\$15.85	\$0.00	\$64.60
	06/01/2020	\$41.89	\$7.85	\$15.85	\$0.00	\$65.59
	12/01/2020	\$42.87	\$7.85	\$15.85	\$0.00	\$66.57
	06/01/2021	\$43.89	\$7.85	\$15.85	\$0.00	\$67.59
	12/01/2021	\$44.90	\$7.85	\$15.85	\$0.00	\$68.60
For apprentice rates see "Apprentice- LABORER"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2019	\$44.71	\$7.07	\$17.72	\$0.00	\$69.50
	01/01/2020	\$46.10	\$7.07	\$17.98	\$0.00	\$71.15



**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - BOILERMAKER - Local 29**

**Effective Date - 01/01/2019**

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

**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)	08/01/2019	\$54.40	\$10.75	\$21.30	\$0.00	\$86.45
BRICKLAYERS LOCAL 3 (BOSTON)	02/01/2020	\$55.04	\$10.75	\$21.30	\$0.00	\$87.09
	08/01/2020	\$56.39	\$10.75	\$21.45	\$0.00	\$88.59
	02/01/2021	\$57.03	\$10.75	\$21.45	\$0.00	\$89.23
	08/01/2021	\$58.43	\$10.75	\$21.61	\$0.00	\$90.79
	02/01/2022	\$59.02	\$10.75	\$21.61	\$0.00	\$91.38

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Boston**

**Effective Date - 08/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.20	\$10.75	\$21.30	\$0.00	\$59.25
2	60	\$32.64	\$10.75	\$21.30	\$0.00	\$64.69
3	70	\$38.08	\$10.75	\$21.30	\$0.00	\$70.13
4	80	\$43.52	\$10.75	\$21.30	\$0.00	\$75.57
5	90	\$48.96	\$10.75	\$21.30	\$0.00	\$81.01

**Effective Date - 02/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.52	\$10.75	\$21.30	\$0.00	\$59.57
2	60	\$33.02	\$10.75	\$21.30	\$0.00	\$65.07
3	70	\$38.53	\$10.75	\$21.30	\$0.00	\$70.58
4	80	\$44.03	\$10.75	\$21.30	\$0.00	\$76.08
5	90	\$49.54	\$10.75	\$21.30	\$0.00	\$81.59

**Notes:**

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**Apprentice to Journeyworker Ratio:1:5**

<b>BULLDOZER/GRADER/SCRAPER</b>	06/01/2019	\$47.69	\$12.00	\$15.60	\$0.00	\$75.29
<i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2019	\$48.83	\$12.00	\$15.60	\$0.00	\$76.43
	06/01/2020	\$49.91	\$12.00	\$15.60	\$0.00	\$77.51
	12/01/2020	\$51.05	\$12.00	\$15.60	\$0.00	\$78.65
	06/01/2021	\$52.14	\$12.00	\$15.60	\$0.00	\$79.74
	12/01/2021	\$53.28	\$12.00	\$15.60	\$0.00	\$80.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>CAISSON &amp; UNDERPINNING BOTTOM MAN</b>	06/01/2019	\$40.25	\$7.85	\$16.05	\$0.00	\$64.15
<i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2019	\$41.25	\$7.85	\$16.05	\$0.00	\$65.15
	06/01/2020	\$42.24	\$7.85	\$16.05	\$0.00	\$66.14
	12/01/2020	\$43.22	\$7.85	\$16.05	\$0.00	\$67.12
	06/01/2021	\$44.24	\$7.85	\$16.05	\$0.00	\$68.14
	12/01/2021	\$45.25	\$7.85	\$16.05	\$0.00	\$69.15

For apprentice rates see "Apprentice- LABORER"

<b>CAISSON &amp; UNDERPINNING LABORER</b>	06/01/2019	\$39.10	\$7.85	\$16.05	\$0.00	\$63.00
<i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2019	\$40.10	\$7.85	\$16.05	\$0.00	\$64.00
	06/01/2020	\$41.09	\$7.85	\$16.05	\$0.00	\$64.99
	12/01/2020	\$42.07	\$7.85	\$16.05	\$0.00	\$65.97
	06/01/2021	\$43.09	\$7.85	\$16.05	\$0.00	\$66.99
	12/01/2021	\$44.10	\$7.85	\$16.05	\$0.00	\$68.00

For apprentice rates see "Apprentice- LABORER"

<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2019	\$39.10	\$7.85	\$16.05	\$0.00	\$63.00
	12/01/2019	\$40.10	\$7.85	\$16.05	\$0.00	\$64.00
	06/01/2020	\$41.09	\$7.85	\$16.05	\$0.00	\$64.99
	12/01/2020	\$42.07	\$7.85	\$16.05	\$0.00	\$65.97
	06/01/2021	\$43.09	\$7.85	\$16.05	\$0.00	\$66.99
	12/01/2021	\$44.10	\$7.85	\$16.05	\$0.00	\$68.00
	For apprentice rates see "Apprentice- LABORER"					
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.40	\$7.85	\$15.85	\$0.00	\$63.10
	12/01/2019	\$40.40	\$7.85	\$15.85	\$0.00	\$64.10
	06/01/2020	\$41.39	\$7.85	\$15.85	\$0.00	\$65.09
	12/01/2020	\$42.37	\$7.85	\$15.85	\$0.00	\$66.07
	06/01/2021	\$43.39	\$7.85	\$15.85	\$0.00	\$67.09
	12/01/2021	\$44.40	\$7.85	\$15.85	\$0.00	\$68.10
	For apprentice rates see "Apprentice- LABORER"					
CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	09/01/2019	\$41.90	\$9.40	\$18.95	\$0.00	\$70.25
	03/01/2020	\$42.50	\$9.40	\$18.95	\$0.00	\$70.85
	09/01/2020	\$43.15	\$9.40	\$18.95	\$0.00	\$71.50
	03/01/2021	\$43.75	\$9.40	\$18.95	\$0.00	\$72.10
	09/01/2021	\$44.40	\$9.40	\$18.95	\$0.00	\$72.75
	03/01/2022	\$45.00	\$9.40	\$18.95	\$0.00	\$73.35
	09/01/2022	\$45.65	\$9.40	\$18.95	\$0.00	\$74.00
	03/01/2023	\$46.25	\$9.40	\$18.95	\$0.00	\$74.60

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - CARPENTER - Zone 2 Eastern MA**

**Effective Date - 09/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.95	\$9.40	\$1.73	\$0.00	\$32.08
2	60	\$25.14	\$9.40	\$1.73	\$0.00	\$36.27
3	70	\$29.33	\$9.40	\$13.76	\$0.00	\$52.49
4	75	\$31.43	\$9.40	\$13.76	\$0.00	\$54.59
5	80	\$33.52	\$9.40	\$15.49	\$0.00	\$58.41
6	80	\$33.52	\$9.40	\$15.49	\$0.00	\$58.41
7	90	\$37.71	\$9.40	\$17.22	\$0.00	\$64.33
8	90	\$37.71	\$9.40	\$17.22	\$0.00	\$64.33

**Effective Date - 03/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.25	\$9.40	\$1.73	\$0.00	\$32.38
2	60	\$25.50	\$9.40	\$1.73	\$0.00	\$36.63
3	70	\$29.75	\$9.40	\$13.76	\$0.00	\$52.91
4	75	\$31.88	\$9.40	\$13.76	\$0.00	\$55.04
5	80	\$34.00	\$9.40	\$15.49	\$0.00	\$58.89
6	80	\$34.00	\$9.40	\$15.49	\$0.00	\$58.89
7	90	\$38.25	\$9.40	\$17.22	\$0.00	\$64.87
8	90	\$38.25	\$9.40	\$17.22	\$0.00	\$64.87

**Notes:**

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80  
 Step 1&2 \$29.99/ 3&4 \$35.85/ 5&6 \$54.22/ 7&8 \$60.14

**Apprentice to Journeyworker Ratio:1:5**

CARPENTER WOOD FRAME CARPENTERS -ZONE 2 (Wood Frame)	10/01/2019	\$27.95	\$7.07	\$7.86	\$0.00	\$42.88
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All Aspects of New Wood Frame Work

**Apprentice - CARPENTER (Wood Frame) - Zone 2**

**Effective Date - 10/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.77	\$7.07	\$0.00	\$0.00	\$23.84
2	60	\$16.77	\$7.07	\$0.00	\$0.00	\$23.84
3	65	\$18.17	\$7.07	\$7.86	\$0.00	\$33.10
4	70	\$19.57	\$7.07	\$7.86	\$0.00	\$34.50
5	75	\$20.96	\$7.07	\$7.86	\$0.00	\$35.89
6	80	\$22.36	\$7.07	\$7.86	\$0.00	\$37.29
7	85	\$23.76	\$7.07	\$7.86	\$0.00	\$38.69
8	90	\$25.16	\$7.07	\$7.86	\$0.00	\$40.09

**Notes:**

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80  
Step 1&2 \$19.65/ 3&4 \$27.19/ 5&6 \$34.50/ 7&8 \$37.29

**Apprentice to Journeyworker Ratio:1:5**

CEMENT MASONRY/PLASTERING BRICKLAYERS LOCAL 3 (BOSTON)	07/01/2019	\$47.67	\$12.75	\$22.41	\$0.62	\$83.45
	01/01/2020	\$49.07	\$12.75	\$22.41	\$0.62	\$84.85

**Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (Boston)**

**Effective Date - 07/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.84	\$12.75	\$15.41	\$0.00	\$52.00
2	60	\$28.60	\$12.75	\$17.41	\$0.62	\$59.38
3	65	\$30.99	\$12.75	\$18.41	\$0.62	\$62.77
4	70	\$33.37	\$12.75	\$19.41	\$0.62	\$66.15
5	75	\$35.75	\$12.75	\$20.41	\$0.62	\$69.53
6	80	\$38.14	\$12.75	\$21.41	\$0.62	\$72.92
7	90	\$42.90	\$12.75	\$22.41	\$0.62	\$78.68

**Effective Date - 01/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.54	\$12.75	\$15.41	\$0.00	\$52.70
2	60	\$29.44	\$12.75	\$17.41	\$0.62	\$60.22
3	65	\$31.90	\$12.75	\$18.41	\$0.62	\$63.68
4	70	\$34.35	\$12.75	\$19.41	\$0.62	\$67.13
5	75	\$36.80	\$12.75	\$20.41	\$0.62	\$70.58
6	80	\$39.26	\$12.75	\$21.41	\$0.62	\$74.04
7	90	\$44.16	\$12.75	\$22.41	\$0.62	\$79.94

**Notes:**

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

**Apprentice to Journeyworker Ratio:1:3**

<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
CHAIN SAW OPERATOR <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.40	\$7.85	\$15.85	\$0.00	\$63.10
	12/01/2019	\$40.40	\$7.85	\$15.85	\$0.00	\$64.10
	06/01/2020	\$41.39	\$7.85	\$15.85	\$0.00	\$65.09
	12/01/2020	\$42.37	\$7.85	\$15.85	\$0.00	\$66.07
	06/01/2021	\$43.39	\$7.85	\$15.85	\$0.00	\$67.09
	12/01/2021	\$44.40	\$7.85	\$15.85	\$0.00	\$68.10
	For apprentice rates see "Apprentice- LABORER"					
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$49.18	\$12.00	\$15.60	\$0.00	\$76.78
	12/01/2019	\$50.33	\$12.00	\$15.60	\$0.00	\$77.93
	06/01/2020	\$51.43	\$12.00	\$15.60	\$0.00	\$79.03
	12/01/2020	\$52.58	\$12.00	\$15.60	\$0.00	\$80.18
	06/01/2021	\$53.68	\$12.00	\$15.60	\$0.00	\$81.28
	12/01/2021	\$54.83	\$12.00	\$15.60	\$0.00	\$82.43
	For apprentice rates see "Apprentice- OPERATING ENGINEERS"					
COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$32.28	\$12.00	\$15.60	\$0.00	\$59.88
	12/01/2019	\$33.07	\$12.00	\$15.60	\$0.00	\$60.67
	06/01/2020	\$33.82	\$12.00	\$15.60	\$0.00	\$61.42
	12/01/2020	\$34.60	\$12.00	\$15.60	\$0.00	\$62.20
	06/01/2021	\$35.35	\$12.00	\$15.60	\$0.00	\$62.95
	12/01/2021	\$36.14	\$12.00	\$15.60	\$0.00	\$63.74
	For apprentice rates see "Apprentice- OPERATING ENGINEERS"					
DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2019	\$50.66	\$8.20	\$21.45	\$0.00	\$80.31
	01/01/2020	\$50.96	\$8.20	\$22.10	\$0.00	\$81.26
	07/01/2020	\$52.06	\$8.20	\$22.10	\$0.00	\$82.36
	01/01/2021	\$53.16	\$8.20	\$22.10	\$0.00	\$83.46

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - PAINTER Local 35 - BRIDGES/TANKS**

**Effective Date - 07/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.33	\$8.20	\$0.00	\$0.00	\$33.53
2	55	\$27.86	\$8.20	\$5.78	\$0.00	\$41.84
3	60	\$30.40	\$8.20	\$6.30	\$0.00	\$44.90
4	65	\$32.93	\$8.20	\$6.83	\$0.00	\$47.96
5	70	\$35.46	\$8.20	\$18.30	\$0.00	\$61.96
6	75	\$38.00	\$8.20	\$18.83	\$0.00	\$65.03
7	80	\$40.53	\$8.20	\$19.35	\$0.00	\$68.08
8	90	\$45.59	\$8.20	\$20.40	\$0.00	\$74.19

**Effective Date - 01/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.48	\$8.20	\$0.00	\$0.00	\$33.68
2	55	\$28.03	\$8.20	\$5.94	\$0.00	\$42.17
3	60	\$30.58	\$8.20	\$6.48	\$0.00	\$45.26
4	65	\$33.12	\$8.20	\$7.02	\$0.00	\$48.34
5	70	\$35.67	\$8.20	\$18.51	\$0.00	\$62.38
6	75	\$38.22	\$8.20	\$19.05	\$0.00	\$65.47
7	80	\$40.77	\$8.20	\$19.59	\$0.00	\$68.56
8	90	\$45.86	\$8.20	\$20.67	\$0.00	\$74.73

**Notes:**  
Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

DEMO: ADZEMAN LABORERS - ZONE 1	06/01/2019	\$39.30	\$7.85	\$15.85	\$0.00	\$63.00
	12/01/2019	\$40.30	\$7.85	\$15.85	\$0.00	\$64.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 1	06/01/2019	\$40.30	\$7.85	\$15.85	\$0.00	\$64.00
	12/01/2019	\$41.30	\$7.85	\$15.85	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: BURNERS LABORERS - ZONE 1	06/01/2019	\$40.05	\$7.85	\$15.85	\$0.00	\$63.75
	12/01/2019	\$41.05	\$7.85	\$15.85	\$0.00	\$64.75
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER LABORERS - ZONE 1	06/01/2019	\$40.30	\$7.85	\$15.85	\$0.00	\$64.00
	12/01/2019	\$41.30	\$7.85	\$15.85	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR LABORERS - ZONE 1	06/01/2019	\$40.05	\$7.85	\$15.85	\$0.00	\$63.75
	12/01/2019	\$41.05	\$7.85	\$15.85	\$0.00	\$64.75
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER LABORERS - ZONE 1	06/01/2019	\$39.30	\$7.85	\$15.85	\$0.00	\$63.00
	12/01/2019	\$40.30	\$7.85	\$15.85	\$0.00	\$64.00
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$47.69	\$12.00	\$15.60	\$0.00	\$75.29
	12/01/2019	\$48.83	\$12.00	\$15.60	\$0.00	\$76.43
	06/01/2020	\$49.91	\$12.00	\$15.60	\$0.00	\$77.51
	12/01/2020	\$51.05	\$12.00	\$15.60	\$0.00	\$78.65
	06/01/2021	\$52.14	\$12.00	\$15.60	\$0.00	\$79.74
	12/01/2021	\$53.28	\$12.00	\$15.60	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2019	\$68.52	\$9.90	\$21.15	\$0.00	\$99.57
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2019	\$48.94	\$9.90	\$21.15	\$0.00	\$79.99
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2019	\$73.41	\$9.90	\$21.15	\$0.00	\$104.46
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2019	\$102.78	\$9.90	\$21.15	\$0.00	\$133.83
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) <i>ELECTRICIANS LOCAL 103</i>	03/01/2019	\$51.10	\$13.00	\$18.88	\$0.00	\$82.98
For apprentice rates see "Apprentice- ELECTRICIAN"						
ELECTRICIAN <i>ELECTRICIANS LOCAL 103</i>	03/01/2019	\$51.10	\$13.00	\$18.88	\$0.00	\$82.98

**Apprentice - ELECTRICIAN - Local 103**

**Effective Date - 03/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$20.44	\$13.00	\$0.61	\$0.00	\$34.05
2	40	\$20.44	\$13.00	\$0.61	\$0.00	\$34.05
3	45	\$23.00	\$13.00	\$14.34	\$0.00	\$50.34
4	45	\$23.00	\$13.00	\$14.34	\$0.00	\$50.34
5	50	\$25.55	\$13.00	\$14.76	\$0.00	\$53.31
6	55	\$28.11	\$13.00	\$15.17	\$0.00	\$56.28
7	60	\$30.66	\$13.00	\$15.58	\$0.00	\$59.24
8	65	\$33.22	\$13.00	\$16.00	\$0.00	\$62.22
9	70	\$35.77	\$13.00	\$16.40	\$0.00	\$65.17
10	75	\$38.33	\$13.00	\$16.82	\$0.00	\$68.15

**Notes :**

App Prior 1/1/03; 30/35/40/45/50/55/65/70/75/80

**Apprentice to Journeyworker Ratio:2:3\*\*\***

ELEVATOR CONSTRUCTOR <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2019	\$59.47	\$15.58	\$17.51	\$0.00	\$92.56
	01/01/2020	\$61.42	\$15.73	\$18.41	\$0.00	\$95.56
	01/01/2021	\$63.47	\$15.88	\$19.31	\$0.00	\$98.66
	01/01/2022	\$65.62	\$16.03	\$20.21	\$0.00	\$101.86



**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - ELEVATOR CONSTRUCTOR - Local 4**

**Effective Date - 01/01/2019**

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

**Effective Date - 01/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.71	\$15.73	\$0.00	\$0.00	\$46.44
2	55	\$33.78	\$15.73	\$18.41	\$0.00	\$67.92
3	65	\$39.92	\$15.73	\$18.41	\$0.00	\$74.06
4	70	\$42.99	\$15.73	\$18.41	\$0.00	\$77.13
5	80	\$49.14	\$15.73	\$18.41	\$0.00	\$83.28

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

**Apprentice to Journeyworker Ratio:1:1**

ELEVATOR CONSTRUCTOR HELPER <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2019	\$41.63	\$15.58	\$17.51	\$0.00	\$74.72
	01/01/2020	\$42.99	\$15.73	\$18.41	\$0.00	\$77.13
	01/01/2021	\$44.43	\$15.88	\$19.31	\$0.00	\$79.62
	01/01/2022	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17

For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.40	\$7.85	\$15.85	\$0.00	\$63.10
	12/01/2019	\$40.40	\$7.85	\$15.85	\$0.00	\$64.10
	06/01/2020	\$41.39	\$7.85	\$15.85	\$0.00	\$65.09
	12/01/2020	\$42.37	\$7.85	\$15.85	\$0.00	\$66.07
	06/01/2021	\$43.39	\$7.85	\$15.85	\$0.00	\$67.09
	12/01/2021	\$44.40	\$7.85	\$15.85	\$0.00	\$68.10

For apprentice rates see "Apprentice- LABORER"

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2019	\$44.18	\$12.00	\$15.60	\$0.00	\$71.78
	05/01/2020	\$45.33	\$12.00	\$15.60	\$0.00	\$72.93
	11/01/2020	\$46.33	\$12.00	\$15.60	\$0.00	\$73.93
	05/01/2021	\$47.48	\$12.00	\$15.60	\$0.00	\$75.08
	11/01/2021	\$48.48	\$12.00	\$15.60	\$0.00	\$76.08
	05/01/2022	\$49.63	\$12.00	\$15.60	\$0.00	\$77.23

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2019	\$45.68	\$12.00	\$15.60	\$0.00	\$73.28
	05/01/2020	\$46.83	\$12.00	\$15.60	\$0.00	\$74.43
	11/01/2020	\$47.84	\$12.00	\$15.60	\$0.00	\$75.44
	05/01/2021	\$49.00	\$12.00	\$15.60	\$0.00	\$76.60
	11/01/2021	\$50.01	\$12.00	\$15.60	\$0.00	\$77.61
	05/01/2022	\$51.17	\$12.00	\$15.60	\$0.00	\$78.77
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2019	\$22.57	\$12.00	\$15.60	\$0.00	\$50.17
	05/01/2020	\$23.24	\$12.00	\$15.60	\$0.00	\$50.84
	11/01/2020	\$23.83	\$12.00	\$15.60	\$0.00	\$51.43
	05/01/2021	\$24.51	\$12.00	\$15.60	\$0.00	\$52.11
	11/01/2021	\$25.11	\$12.00	\$15.60	\$0.00	\$52.71
	05/01/2022	\$25.78	\$12.00	\$15.60	\$0.00	\$53.38
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 103</i>	03/01/2019	\$51.10	\$13.00	\$18.88	\$0.00	\$82.98
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS LOCAL 103</i>	03/01/2019	\$38.33	\$13.00	\$16.82	\$0.00	\$68.15
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$39.54	\$12.00	\$15.60	\$0.00	\$67.14
	12/01/2019	\$40.49	\$12.00	\$15.60	\$0.00	\$68.09
	06/01/2020	\$41.40	\$12.00	\$15.60	\$0.00	\$69.00
	12/01/2020	\$42.35	\$12.00	\$15.60	\$0.00	\$69.95
	06/01/2021	\$43.26	\$12.00	\$15.60	\$0.00	\$70.86
	12/01/2021	\$44.21	\$12.00	\$15.60	\$0.00	\$71.81
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER <i>LABORERS - ZONE 1</i>	06/01/2019	\$22.50	\$7.85	\$15.85	\$0.00	\$46.20
	12/01/2019	\$23.50	\$7.85	\$15.85	\$0.00	\$47.20
	06/01/2020	\$23.50	\$7.85	\$15.85	\$0.00	\$47.20
	12/01/2020	\$24.50	\$7.85	\$15.85	\$0.00	\$48.20
	06/01/2021	\$24.50	\$7.85	\$15.85	\$0.00	\$48.20
	12/01/2021	\$24.50	\$7.85	\$15.85	\$0.00	\$48.20
For apprentice rates see "Apprentice- LABORER"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE 1</i>	09/01/2019	\$46.25	\$9.40	\$19.25	\$0.00	\$74.90
	03/01/2020	\$47.05	\$9.40	\$19.25	\$0.00	\$75.70
	09/01/2020	\$47.85	\$9.40	\$19.25	\$0.00	\$76.50
	03/01/2021	\$48.65	\$9.40	\$19.25	\$0.00	\$77.30
	09/01/2021	\$49.45	\$9.40	\$19.25	\$0.00	\$78.10
	03/01/2022	\$50.25	\$9.40	\$19.25	\$0.00	\$78.90

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - FLOORCOVERER - Local 2168 Zone I**

**Effective Date - 09/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.13	\$9.40	\$1.79	\$0.00	\$34.32
2	55	\$25.44	\$9.40	\$1.79	\$0.00	\$36.63
3	60	\$27.75	\$9.40	\$13.88	\$0.00	\$51.03
4	65	\$30.06	\$9.40	\$13.88	\$0.00	\$53.34
5	70	\$32.38	\$9.40	\$15.67	\$0.00	\$57.45
6	75	\$34.69	\$9.40	\$15.67	\$0.00	\$59.76
7	80	\$37.00	\$9.40	\$17.46	\$0.00	\$63.86
8	85	\$39.31	\$9.40	\$17.46	\$0.00	\$66.17

**Effective Date - 03/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.53	\$9.40	\$1.79	\$0.00	\$34.72
2	55	\$25.88	\$9.40	\$1.79	\$0.00	\$37.07
3	60	\$28.23	\$9.40	\$13.88	\$0.00	\$51.51
4	65	\$30.58	\$9.40	\$13.88	\$0.00	\$53.86
5	70	\$32.94	\$9.40	\$15.67	\$0.00	\$58.01
6	75	\$35.29	\$9.40	\$15.67	\$0.00	\$60.36
7	80	\$37.64	\$9.40	\$17.46	\$0.00	\$64.50
8	85	\$39.99	\$9.40	\$17.46	\$0.00	\$66.85

**Notes:** Steps are 750 hrs.  
 % After 09/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)  
 Step 1&2 \$32.00/ 3&4 \$38.36/ 5&6 \$57.45/ 7&8 \$63.86

**Apprentice to Journeyworker Ratio:1:1**

<b>FORK LIFT/CHERRY PICKER</b> <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$48.18	\$12.00	\$15.60	\$0.00	\$75.78
	12/01/2019	\$49.33	\$12.00	\$15.60	\$0.00	\$76.93
	06/01/2020	\$50.43	\$12.00	\$15.60	\$0.00	\$78.03
	12/01/2020	\$51.58	\$12.00	\$15.60	\$0.00	\$79.18
	06/01/2021	\$52.68	\$12.00	\$15.60	\$0.00	\$80.28
	12/01/2021	\$53.83	\$12.00	\$15.60	\$0.00	\$81.43

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>GENERATOR/LIGHTING PLANT/HEATERS</b> <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$32.28	\$12.00	\$15.60	\$0.00	\$59.88
	12/01/2019	\$33.07	\$12.00	\$15.60	\$0.00	\$60.67
	06/01/2020	\$33.82	\$12.00	\$15.60	\$0.00	\$61.42
	12/01/2020	\$34.60	\$12.00	\$15.60	\$0.00	\$62.20
	06/01/2021	\$35.35	\$12.00	\$15.60	\$0.00	\$62.95
	12/01/2021	\$36.14	\$12.00	\$15.60	\$0.00	\$63.74

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS)</b> <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	07/01/2019	\$40.16	\$8.20	\$21.45	\$0.00	\$69.81
	01/01/2020	\$40.46	\$8.20	\$22.10	\$0.00	\$70.76
	07/01/2020	\$41.56	\$8.20	\$22.10	\$0.00	\$71.86
	01/01/2021	\$42.66	\$8.20	\$22.10	\$0.00	\$72.96

**Apprentice - GLAZIER - Local 35 Zone 2**

**Effective Date - 07/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.08	\$8.20	\$0.00	\$0.00	\$28.28
2	55	\$22.09	\$8.20	\$5.78	\$0.00	\$36.07
3	60	\$24.10	\$8.20	\$6.30	\$0.00	\$38.60
4	65	\$26.10	\$8.20	\$6.83	\$0.00	\$41.13
5	70	\$28.11	\$8.20	\$18.30	\$0.00	\$54.61
6	75	\$30.12	\$8.20	\$18.83	\$0.00	\$57.15
7	80	\$32.13	\$8.20	\$19.35	\$0.00	\$59.68
8	90	\$36.14	\$8.20	\$20.40	\$0.00	\$64.74

**Effective Date - 01/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.23	\$8.20	\$0.00	\$0.00	\$28.43
2	55	\$22.25	\$8.20	\$5.94	\$0.00	\$36.39
3	60	\$24.28	\$8.20	\$6.48	\$0.00	\$38.96
4	65	\$26.30	\$8.20	\$7.02	\$0.00	\$41.52
5	70	\$28.32	\$8.20	\$18.51	\$0.00	\$55.03
6	75	\$30.35	\$8.20	\$19.05	\$0.00	\$57.60
7	80	\$32.37	\$8.20	\$19.59	\$0.00	\$60.16
8	90	\$36.41	\$8.20	\$20.67	\$0.00	\$65.28

**Notes:**  
Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

HOISTING ENGINEER/CRANES/GRADALLS	06/01/2019	\$48.18	\$12.00	\$15.60	\$0.00	\$75.78
OPERATING ENGINEERS LOCAL 4	12/01/2019	\$49.33	\$12.00	\$15.60	\$0.00	\$76.93
	06/01/2020	\$50.43	\$12.00	\$15.60	\$0.00	\$78.03
	12/01/2020	\$51.58	\$12.00	\$15.60	\$0.00	\$79.18
	06/01/2021	\$52.68	\$12.00	\$15.60	\$0.00	\$80.28
	12/01/2021	\$53.83	\$12.00	\$15.60	\$0.00	\$81.43

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - OPERATING ENGINEERS - Local 4**

**Effective Date - 06/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$26.50	\$12.00	\$0.00	\$0.00	\$38.50
2	60	\$28.91	\$12.00	\$15.60	\$0.00	\$56.51
3	65	\$31.32	\$12.00	\$15.60	\$0.00	\$58.92
4	70	\$33.73	\$12.00	\$15.60	\$0.00	\$61.33
5	75	\$36.14	\$12.00	\$15.60	\$0.00	\$63.74
6	80	\$38.54	\$12.00	\$15.60	\$0.00	\$66.14
7	85	\$40.95	\$12.00	\$15.60	\$0.00	\$68.55
8	90	\$43.36	\$12.00	\$15.60	\$0.00	\$70.96

**Effective Date - 12/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$27.13	\$12.00	\$0.00	\$0.00	\$39.13
2	60	\$29.60	\$12.00	\$15.60	\$0.00	\$57.20
3	65	\$32.06	\$12.00	\$15.60	\$0.00	\$59.66
4	70	\$34.53	\$12.00	\$15.60	\$0.00	\$62.13
5	75	\$37.00	\$12.00	\$15.60	\$0.00	\$64.60
6	80	\$39.46	\$12.00	\$15.60	\$0.00	\$67.06
7	85	\$41.93	\$12.00	\$15.60	\$0.00	\$69.53
8	90	\$44.40	\$12.00	\$15.60	\$0.00	\$72.00

**Notes:**

**Apprentice to Journeyworker Ratio:1:6**

HVAC (DUCTWORK) SHEETMETAL WORKERS LOCAL 17 - A	08/01/2019	\$48.10	\$13.20	\$24.12	\$2.56	\$87.98
	02/01/2020	\$49.75	\$13.20	\$24.12	\$2.61	\$89.68
	08/01/2020	\$51.35	\$13.20	\$24.12	\$2.66	\$91.33
	02/01/2021	\$53.00	\$13.20	\$24.12	\$2.71	\$93.03
	08/01/2021	\$54.75	\$13.20	\$24.12	\$2.76	\$94.83
	02/01/2022	\$56.50	\$13.20	\$24.12	\$2.81	\$96.63

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS) ELECTRICIANS LOCAL 103	03/01/2019	\$51.10	\$13.00	\$18.88	\$0.00	\$82.98
	08/01/2019	\$48.10	\$13.20	\$24.12	\$2.56	\$87.98
	02/01/2020	\$49.75	\$13.20	\$24.12	\$2.61	\$89.68
	08/01/2020	\$51.35	\$13.20	\$24.12	\$2.66	\$91.33
	02/01/2021	\$53.00	\$13.20	\$24.12	\$2.71	\$93.03
	08/01/2021	\$54.75	\$13.20	\$24.12	\$2.76	\$94.83
	02/01/2022	\$56.50	\$13.20	\$24.12	\$2.81	\$96.63

For apprentice rates see "Apprentice- SHEET METAL WORKER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC (TESTING AND BALANCING -WATER) <i>PIPEFITTERS LOCAL 537</i>	09/01/2019	\$54.69	\$10.95	\$19.74	\$0.00	\$85.38
	03/01/2020	\$56.19	\$10.95	\$19.74	\$0.00	\$86.88
	09/01/2020	\$57.69	\$10.95	\$19.74	\$0.00	\$88.38
	03/01/2021	\$59.19	\$10.95	\$19.74	\$0.00	\$89.88
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PIPEFITTERS LOCAL 537</i>	09/01/2019	\$54.69	\$10.95	\$19.74	\$0.00	\$85.38
	03/01/2020	\$56.19	\$10.95	\$19.74	\$0.00	\$86.88
	09/01/2020	\$57.69	\$10.95	\$19.74	\$0.00	\$88.38
	03/01/2021	\$59.19	\$10.95	\$19.74	\$0.00	\$89.88
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.90	\$7.85	\$15.85	\$0.00	\$63.60
	12/01/2019	\$40.90	\$7.85	\$15.85	\$0.00	\$64.60
	06/01/2020	\$41.89	\$7.85	\$15.85	\$0.00	\$65.59
	12/01/2020	\$42.87	\$7.85	\$15.85	\$0.00	\$66.57
	06/01/2021	\$43.89	\$7.85	\$15.85	\$0.00	\$67.59
	12/01/2021	\$44.90	\$7.85	\$15.85	\$0.00	\$68.60
For apprentice rates see "Apprentice- LABORER"						
INSULATOR (PIPES & TANKS) <i>HEAT &amp; FROST INSULATORS LOCAL 6 (BOSTON)</i>	09/01/2019	\$48.44	\$12.80	\$16.40	\$0.00	\$77.64

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

**Effective Date - 09/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.22	\$12.80	\$11.90	\$0.00	\$48.92
2	60	\$29.06	\$12.80	\$12.80	\$0.00	\$54.66
3	70	\$33.91	\$12.80	\$13.70	\$0.00	\$60.41
4	80	\$38.75	\$12.80	\$14.60	\$0.00	\$66.15

**Notes:**

Steps are 1 year

**Apprentice to Journeyworker Ratio:1:4**

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (BOSTON AREA)</i>	03/16/2019	\$46.66	\$8.00	\$23.50	\$0.00	\$78.16
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**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - IRONWORKER - Local 7 Boston**

**Effective Date - 03/16/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$28.00	\$8.00	\$23.50	\$0.00	\$59.50
2	70	\$32.66	\$8.00	\$23.50	\$0.00	\$64.16
3	75	\$35.00	\$8.00	\$23.50	\$0.00	\$66.50
4	80	\$37.33	\$8.00	\$23.50	\$0.00	\$68.83
5	85	\$39.66	\$8.00	\$23.50	\$0.00	\$71.16
6	90	\$41.99	\$8.00	\$23.50	\$0.00	\$73.49

**Notes:**

\*\* Structural 1:6; Ornamental 1:4

**Apprentice to Journeyworker Ratio:\*\***

JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 1	06/01/2019	\$39.40	\$7.85	\$15.85	\$0.00	\$63.10
	12/01/2019	\$40.40	\$7.85	\$15.85	\$0.00	\$64.10
	06/01/2020	\$41.39	\$7.85	\$15.85	\$0.00	\$65.09
	12/01/2020	\$42.37	\$7.85	\$15.85	\$0.00	\$66.07
	06/01/2021	\$43.39	\$7.85	\$15.85	\$0.00	\$67.09
	12/01/2021	\$44.40	\$7.85	\$15.85	\$0.00	\$68.10

For apprentice rates see "Apprentice- LABORER"

LABORER LABORERS - ZONE 1	06/01/2019	\$39.15	\$7.85	\$15.85	\$0.00	\$62.85
	12/01/2019	\$40.15	\$7.85	\$15.85	\$0.00	\$63.85
	06/01/2020	\$41.14	\$7.85	\$15.85	\$0.00	\$64.84
	12/01/2020	\$42.12	\$7.85	\$15.85	\$0.00	\$65.82
	06/01/2021	\$43.14	\$7.85	\$15.85	\$0.00	\$66.84
	12/01/2021	\$44.15	\$7.85	\$15.85	\$0.00	\$67.85

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - LABORER - Zone 1**

**Effective Date - 06/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.49	\$7.85	\$15.85	\$0.00	\$47.19
2	70	\$27.41	\$7.85	\$15.85	\$0.00	\$51.11
3	80	\$31.32	\$7.85	\$15.85	\$0.00	\$55.02
4	90	\$35.24	\$7.85	\$15.85	\$0.00	\$58.94

**Effective Date - 12/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.09	\$7.85	\$15.85	\$0.00	\$47.79
2	70	\$28.11	\$7.85	\$15.85	\$0.00	\$51.81
3	80	\$32.12	\$7.85	\$15.85	\$0.00	\$55.82
4	90	\$36.14	\$7.85	\$15.85	\$0.00	\$59.84

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

LABORER: CARPENTER TENDER LABORERS - ZONE 1	06/01/2019	\$39.15	\$7.85	\$15.85	\$0.00	\$62.85
	12/01/2019	\$40.15	\$7.85	\$15.85	\$0.00	\$63.85
	06/01/2020	\$41.14	\$7.85	\$15.85	\$0.00	\$64.84
	12/01/2020	\$42.12	\$7.85	\$15.85	\$0.00	\$65.82
	06/01/2021	\$43.14	\$7.85	\$15.85	\$0.00	\$66.84
	12/01/2021	\$44.15	\$7.85	\$15.85	\$0.00	\$67.85

For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER LABORERS - ZONE 1	06/01/2019	\$39.15	\$7.85	\$15.85	\$0.00	\$62.85
	12/01/2019	\$40.15	\$7.85	\$15.85	\$0.00	\$63.85
	06/01/2020	\$41.14	\$7.85	\$15.85	\$0.00	\$64.84
	12/01/2020	\$42.12	\$7.85	\$15.85	\$0.00	\$65.82
	06/01/2021	\$43.14	\$7.85	\$15.85	\$0.00	\$66.84
	12/01/2021	\$44.15	\$7.85	\$15.85	\$0.00	\$67.85

For apprentice rates see "Apprentice- LABORER"

LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER LABORERS - ZONE 1	06/01/2019	\$39.30	\$7.85	\$15.85	\$0.00	\$63.00
	12/01/2019	\$40.30	\$7.85	\$15.85	\$0.00	\$64.00

For apprentice rates see "Apprentice- LABORER"

LABORER: MASON TENDER LABORERS - ZONE 1	06/01/2019	\$39.40	\$7.85	\$15.85	\$0.00	\$63.10
	12/01/2019	\$40.40	\$7.85	\$15.85	\$0.00	\$64.10
	06/01/2020	\$41.39	\$7.85	\$15.85	\$0.00	\$65.09
	12/01/2020	\$42.37	\$7.85	\$15.85	\$0.00	\$66.07
	06/01/2021	\$43.39	\$7.85	\$15.85	\$0.00	\$67.09
	12/01/2021	\$44.40	\$7.85	\$15.85	\$0.00	\$68.10

For apprentice rates see "Apprentice- LABORER"



<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.15	\$7.85	\$15.85	\$0.00	\$62.85
	12/01/2019	\$40.15	\$7.85	\$15.85	\$0.00	\$63.85
	06/01/2020	\$41.14	\$7.85	\$15.85	\$0.00	\$64.84
	12/01/2020	\$42.12	\$7.85	\$15.85	\$0.00	\$65.82
	06/01/2021	\$43.14	\$7.85	\$15.85	\$0.00	\$66.84
	12/01/2021	\$44.15	\$7.85	\$15.85	\$0.00	\$67.85
	For apprentice rates see "Apprentice- LABORER"					
LABORER: TREE REMOVER <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.15	\$7.85	\$15.85	\$0.00	\$62.85
	12/01/2019	\$40.15	\$7.85	\$15.85	\$0.00	\$63.85
	06/01/2020	\$41.14	\$7.85	\$15.85	\$0.00	\$64.84
	12/01/2020	\$42.12	\$7.85	\$15.85	\$0.00	\$65.82
	06/01/2021	\$43.14	\$7.85	\$15.85	\$0.00	\$66.84
	12/01/2021	\$44.15	\$7.85	\$15.85	\$0.00	\$67.85
	This classification applies to all tree work associated with the removal of standing trees, and trimming and removal of branches and limbs when the work is not done for a utility company for the purpose of operation, maintenance or repair of utility company equipment. For apprentice rates see "Apprentice- LABORER"					
LASER BEAM OPERATOR <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.40	\$7.85	\$15.85	\$0.00	\$63.10
	12/01/2019	\$40.40	\$7.85	\$15.85	\$0.00	\$64.10
	06/01/2020	\$41.39	\$7.85	\$15.85	\$0.00	\$65.09
	12/01/2020	\$42.37	\$7.85	\$15.85	\$0.00	\$66.07
	06/01/2021	\$43.39	\$7.85	\$15.85	\$0.00	\$67.09
	12/01/2021	\$44.40	\$7.85	\$15.85	\$0.00	\$68.10
	For apprentice rates see "Apprentice- LABORER"					
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	08/01/2019	\$41.49	\$10.75	\$19.61	\$0.00	\$71.85
	02/01/2020	\$42.00	\$10.75	\$19.61	\$0.00	\$72.36
	08/01/2020	\$43.08	\$10.75	\$19.76	\$0.00	\$73.59
	02/01/2021	\$43.59	\$10.75	\$19.76	\$0.00	\$74.10
	08/01/2021	\$44.71	\$10.75	\$19.92	\$0.00	\$75.38
	02/01/2022	\$45.18	\$10.75	\$19.92	\$0.00	\$75.85

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

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

**Effective Date - 08/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.75	\$10.75	\$19.61	\$0.00	\$51.11
2	60	\$24.89	\$10.75	\$19.61	\$0.00	\$55.25
3	70	\$29.04	\$10.75	\$19.61	\$0.00	\$59.40
4	80	\$33.19	\$10.75	\$19.61	\$0.00	\$63.55
5	90	\$37.34	\$10.75	\$19.61	\$0.00	\$67.70

**Effective Date - 02/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.00	\$10.75	\$19.61	\$0.00	\$51.36
2	60	\$25.20	\$10.75	\$19.61	\$0.00	\$55.56
3	70	\$29.40	\$10.75	\$19.61	\$0.00	\$59.76
4	80	\$33.60	\$10.75	\$19.61	\$0.00	\$63.96
5	90	\$37.80	\$10.75	\$19.61	\$0.00	\$68.16

**Notes:**

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**Apprentice to Journeyworker Ratio:1:3**

MARBLE MASONS, TILELAYERS & TERRAZZO MECH BRICKLAYERS LOCAL 3 - MARBLE & TILE	08/01/2019	\$54.42	\$10.75	\$21.30	\$0.00	\$86.47
	02/01/2020	\$55.05	\$10.75	\$21.30	\$0.00	\$87.10
	08/01/2020	\$56.40	\$10.75	\$21.45	\$0.00	\$88.60
	02/01/2021	\$57.04	\$10.75	\$21.45	\$0.00	\$89.24
	08/01/2021	\$58.44	\$10.75	\$21.61	\$0.00	\$90.80
	02/01/2022	\$59.01	\$10.75	\$21.61	\$0.00	\$91.37

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

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

**Effective Date - 08/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.21	\$10.75	\$21.30	\$0.00	\$59.26
2	60	\$32.65	\$10.75	\$21.30	\$0.00	\$64.70
3	70	\$38.09	\$10.75	\$21.30	\$0.00	\$70.14
4	80	\$43.54	\$10.75	\$21.30	\$0.00	\$75.59
5	90	\$48.98	\$10.75	\$21.30	\$0.00	\$81.03

**Effective Date - 02/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.53	\$10.75	\$21.30	\$0.00	\$59.58
2	60	\$33.03	\$10.75	\$21.30	\$0.00	\$65.08
3	70	\$38.54	\$10.75	\$21.30	\$0.00	\$70.59
4	80	\$44.04	\$10.75	\$21.30	\$0.00	\$76.09
5	90	\$49.55	\$10.75	\$21.30	\$0.00	\$81.60

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$47.69	\$12.00	\$15.60	\$0.00	\$75.29
	12/01/2019	\$48.83	\$12.00	\$15.60	\$0.00	\$76.43
	06/01/2020	\$49.91	\$12.00	\$15.60	\$0.00	\$77.51
	12/01/2020	\$51.05	\$12.00	\$15.60	\$0.00	\$78.65
	06/01/2021	\$52.14	\$12.00	\$15.60	\$0.00	\$79.74
	12/01/2021	\$53.28	\$12.00	\$15.60	\$0.00	\$80.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$47.69	\$12.00	\$15.60	\$0.00	\$75.29
	12/01/2019	\$48.83	\$12.00	\$15.60	\$0.00	\$76.43
	06/01/2020	\$49.91	\$12.00	\$15.60	\$0.00	\$77.51
	12/01/2020	\$51.05	\$12.00	\$15.60	\$0.00	\$78.65
	06/01/2021	\$52.14	\$12.00	\$15.60	\$0.00	\$79.74
	12/01/2021	\$53.28	\$12.00	\$15.60	\$0.00	\$80.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 1) <i>MILLWRIGHTS LOCAL 1121 - Zone 1</i>	04/01/2019	\$42.22	\$9.90	\$18.50	\$0.00	\$70.62
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**Apprentice - MILLWRIGHT - Local 1121 Zone 1**

**Effective Date - 04/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$23.22	\$9.90	\$5.31	\$0.00	\$38.43
2	65	\$27.44	\$9.90	\$15.13	\$0.00	\$52.47
3	75	\$31.67	\$9.90	\$16.10	\$0.00	\$57.67
4	85	\$35.89	\$9.90	\$17.06	\$0.00	\$62.85

**Notes:**  
Steps are 2,000 hours  
**Apprentice to Journeyworker Ratio:1:5**

<b>MORTAR MIXER</b> <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.40	\$7.85	\$15.85	\$0.00	\$63.10
	12/01/2019	\$40.40	\$7.85	\$15.85	\$0.00	\$64.10
	06/01/2020	\$41.39	\$7.85	\$15.85	\$0.00	\$65.09
	12/01/2020	\$42.37	\$7.85	\$15.85	\$0.00	\$66.07
	06/01/2021	\$43.39	\$7.85	\$15.85	\$0.00	\$67.09
	12/01/2021	\$44.40	\$7.85	\$15.85	\$0.00	\$68.10

For apprentice rates see "Apprentice- LABORER"

<b>OILER (OTHER THAN TRUCK CRANES,GRADALLS)</b> <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$23.11	\$12.00	\$15.60	\$0.00	\$50.71
	12/01/2019	\$23.68	\$12.00	\$15.60	\$0.00	\$51.28
	06/01/2020	\$24.23	\$12.00	\$15.60	\$0.00	\$51.83
	12/01/2020	\$24.80	\$12.00	\$15.60	\$0.00	\$52.40
	06/01/2021	\$25.35	\$12.00	\$15.60	\$0.00	\$52.95
	12/01/2021	\$25.93	\$12.00	\$15.60	\$0.00	\$53.53

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>OILER (TRUCK CRANES, GRADALLS)</b> <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$27.57	\$12.00	\$15.60	\$0.00	\$55.17
	12/01/2019	\$28.24	\$12.00	\$15.60	\$0.00	\$55.84
	06/01/2020	\$28.89	\$12.00	\$15.60	\$0.00	\$56.49
	12/01/2020	\$29.57	\$12.00	\$15.60	\$0.00	\$57.17
	06/01/2021	\$30.21	\$12.00	\$15.60	\$0.00	\$57.81
	12/01/2021	\$30.89	\$12.00	\$15.60	\$0.00	\$58.49

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>OTHER POWER DRIVEN EQUIPMENT - CLASS II</b> <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$47.69	\$12.00	\$15.60	\$0.00	\$75.29
	12/01/2019	\$48.83	\$12.00	\$15.60	\$0.00	\$76.43
	06/01/2020	\$49.91	\$12.00	\$15.60	\$0.00	\$77.51
	12/01/2020	\$51.05	\$12.00	\$15.60	\$0.00	\$78.65
	06/01/2021	\$52.14	\$12.00	\$15.60	\$0.00	\$79.74
	12/01/2021	\$53.28	\$12.00	\$15.60	\$0.00	\$80.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>PAINTER (BRIDGES/TANKS)</b> <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2019	\$50.66	\$8.20	\$21.45	\$0.00	\$80.31
	01/01/2020	\$50.96	\$8.20	\$22.10	\$0.00	\$81.26
	07/01/2020	\$52.06	\$8.20	\$22.10	\$0.00	\$82.36
	01/01/2021	\$53.16	\$8.20	\$22.10	\$0.00	\$83.46

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - PAINTER Local 35 - BRIDGES/TANKS**

**Effective Date - 07/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.33	\$8.20	\$0.00	\$0.00	\$33.53
2	55	\$27.86	\$8.20	\$5.78	\$0.00	\$41.84
3	60	\$30.40	\$8.20	\$6.30	\$0.00	\$44.90
4	65	\$32.93	\$8.20	\$6.83	\$0.00	\$47.96
5	70	\$35.46	\$8.20	\$18.30	\$0.00	\$61.96
6	75	\$38.00	\$8.20	\$18.83	\$0.00	\$65.03
7	80	\$40.53	\$8.20	\$19.35	\$0.00	\$68.08
8	90	\$45.59	\$8.20	\$20.40	\$0.00	\$74.19

**Effective Date - 01/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.48	\$8.20	\$0.00	\$0.00	\$33.68
2	55	\$28.03	\$8.20	\$5.94	\$0.00	\$42.17
3	60	\$30.58	\$8.20	\$6.48	\$0.00	\$45.26
4	65	\$33.12	\$8.20	\$7.02	\$0.00	\$48.34
5	70	\$35.67	\$8.20	\$18.51	\$0.00	\$62.38
6	75	\$38.22	\$8.20	\$19.05	\$0.00	\$65.47
7	80	\$40.77	\$8.20	\$19.59	\$0.00	\$68.56
8	90	\$45.86	\$8.20	\$20.67	\$0.00	\$74.73

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER (SIGN, PICTORIAL & DISPLAY) PAINTERS LOCAL 35 - ZONE 2	06/01/2013	\$25.81	\$7.07	\$7.05	\$0.00	\$39.93
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**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - PAINTER SIGN - Local 35 Zone 2**

**Effective Date - 06/01/2013**

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

**Notes:**  
Steps are 4 mos.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER (SPRAY OR SANDBLAST, NEW) *	07/01/2019	\$41.56	\$8.20	\$21.45	\$0.00	\$71.21
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	01/01/2020	\$41.86	\$8.20	\$22.10	\$0.00	\$72.16
	07/01/2020	\$42.96	\$8.20	\$22.10	\$0.00	\$73.26
	01/01/2021	\$44.06	\$8.20	\$22.10	\$0.00	\$74.36

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

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

**Effective Date - 07/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.78	\$8.20	\$0.00	\$0.00	\$28.98
2	55	\$22.86	\$8.20	\$5.78	\$0.00	\$36.84
3	60	\$24.94	\$8.20	\$6.30	\$0.00	\$39.44
4	65	\$27.01	\$8.20	\$6.83	\$0.00	\$42.04
5	70	\$29.09	\$8.20	\$18.30	\$0.00	\$55.59
6	75	\$31.17	\$8.20	\$18.83	\$0.00	\$58.20
7	80	\$33.25	\$8.20	\$19.35	\$0.00	\$60.80
8	90	\$37.40	\$8.20	\$20.40	\$0.00	\$66.00

**Effective Date - 01/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.93	\$8.20	\$0.00	\$0.00	\$29.13
2	55	\$23.02	\$8.20	\$5.94	\$0.00	\$37.16
3	60	\$25.12	\$8.20	\$6.48	\$0.00	\$39.80
4	65	\$27.21	\$8.20	\$7.02	\$0.00	\$42.43
5	70	\$29.30	\$8.20	\$18.51	\$0.00	\$56.01
6	75	\$31.40	\$8.20	\$19.05	\$0.00	\$58.65
7	80	\$33.49	\$8.20	\$19.59	\$0.00	\$61.28
8	90	\$37.67	\$8.20	\$20.67	\$0.00	\$66.54

**Notes:**  
Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER (SPRAY OR SANDBLAST, REPAINT)	07/01/2019	\$39.62	\$8.20	\$21.45	\$0.00	\$69.27
PAINTERS LOCAL 35 - ZONE 2	01/01/2020	\$39.92	\$8.20	\$22.10	\$0.00	\$70.22
	07/01/2020	\$41.02	\$8.20	\$22.10	\$0.00	\$71.32
	01/01/2021	\$42.12	\$8.20	\$22.10	\$0.00	\$72.42

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

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

**Effective Date - 07/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.81	\$8.20	\$0.00	\$0.00	\$28.01
2	55	\$21.79	\$8.20	\$5.78	\$0.00	\$35.77
3	60	\$23.77	\$8.20	\$6.30	\$0.00	\$38.27
4	65	\$25.75	\$8.20	\$6.83	\$0.00	\$40.78
5	70	\$27.73	\$8.20	\$18.30	\$0.00	\$54.23
6	75	\$29.72	\$8.20	\$18.83	\$0.00	\$56.75
7	80	\$31.70	\$8.20	\$19.35	\$0.00	\$59.25
8	90	\$35.66	\$8.20	\$20.40	\$0.00	\$64.26

**Effective Date - 01/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.96	\$8.20	\$0.00	\$0.00	\$28.16
2	55	\$21.96	\$8.20	\$5.94	\$0.00	\$36.10
3	60	\$23.95	\$8.20	\$6.48	\$0.00	\$38.63
4	65	\$25.95	\$8.20	\$7.02	\$0.00	\$41.17
5	70	\$27.94	\$8.20	\$18.51	\$0.00	\$54.65
6	75	\$29.94	\$8.20	\$19.05	\$0.00	\$57.19
7	80	\$31.94	\$8.20	\$19.59	\$0.00	\$59.73
8	90	\$35.93	\$8.20	\$20.67	\$0.00	\$64.80

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER (TRAFFIC MARKINGS) LABORERS - ZONE 1	06/01/2019	\$39.15	\$7.85	\$15.85	\$0.00	\$62.85
	12/01/2019	\$40.15	\$7.85	\$15.85	\$0.00	\$63.85
	06/01/2020	\$41.14	\$7.85	\$15.85	\$0.00	\$64.84
	12/01/2020	\$42.12	\$7.85	\$15.85	\$0.00	\$65.82
	06/01/2021	\$43.14	\$7.85	\$15.85	\$0.00	\$66.84
	12/01/2021	\$44.15	\$7.85	\$15.85	\$0.00	\$67.85

For Apprentice rates see "Apprentice- LABORER"

PAINTER / TAPER (BRUSH, NEW) * * If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	07/01/2019	\$40.16	\$8.20	\$21.45	\$0.00	\$69.81
	01/01/2020	\$40.46	\$8.20	\$22.10	\$0.00	\$70.76
	07/01/2020	\$41.56	\$8.20	\$22.10	\$0.00	\$71.86
	01/01/2021	\$42.66	\$8.20	\$22.10	\$0.00	\$72.96



**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW**

**Effective Date - 07/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.08	\$8.20	\$0.00	\$0.00	\$28.28
2	55	\$22.09	\$8.20	\$5.78	\$0.00	\$36.07
3	60	\$24.10	\$8.20	\$6.30	\$0.00	\$38.60
4	65	\$26.10	\$8.20	\$6.83	\$0.00	\$41.13
5	70	\$28.11	\$8.20	\$18.30	\$0.00	\$54.61
6	75	\$30.12	\$8.20	\$18.83	\$0.00	\$57.15
7	80	\$32.13	\$8.20	\$19.35	\$0.00	\$59.68
8	90	\$36.14	\$8.20	\$20.40	\$0.00	\$64.74

**Effective Date - 01/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.23	\$8.20	\$0.00	\$0.00	\$28.43
2	55	\$22.25	\$8.20	\$5.94	\$0.00	\$36.39
3	60	\$24.28	\$8.20	\$6.48	\$0.00	\$38.96
4	65	\$26.30	\$8.20	\$7.02	\$0.00	\$41.52
5	70	\$28.32	\$8.20	\$18.51	\$0.00	\$55.03
6	75	\$30.35	\$8.20	\$19.05	\$0.00	\$57.60
7	80	\$32.37	\$8.20	\$19.59	\$0.00	\$60.16
8	90	\$36.41	\$8.20	\$20.67	\$0.00	\$65.28

**Notes:**  
Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER / TAPER (BRUSH, REPAINT)	07/01/2019	\$38.22	\$8.20	\$21.45	\$0.00	\$67.87
PAINTERS LOCAL 35 - ZONE 2	01/01/2020	\$38.52	\$8.20	\$22.10	\$0.00	\$68.82
	07/01/2020	\$39.62	\$8.20	\$22.10	\$0.00	\$69.92
	01/01/2021	\$40.72	\$8.20	\$22.10	\$0.00	\$71.02

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT**

**Effective Date - 07/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.11	\$8.20	\$0.00	\$0.00	\$27.31
2	55	\$21.02	\$8.20	\$5.78	\$0.00	\$35.00
3	60	\$22.93	\$8.20	\$6.30	\$0.00	\$37.43
4	65	\$24.84	\$8.20	\$6.83	\$0.00	\$39.87
5	70	\$26.75	\$8.20	\$18.30	\$0.00	\$53.25
6	75	\$28.67	\$8.20	\$18.83	\$0.00	\$55.70
7	80	\$30.58	\$8.20	\$19.35	\$0.00	\$58.13
8	90	\$34.40	\$8.20	\$20.40	\$0.00	\$63.00

**Effective Date - 01/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.26	\$8.20	\$0.00	\$0.00	\$27.46
2	55	\$21.19	\$8.20	\$5.94	\$0.00	\$35.33
3	60	\$23.11	\$8.20	\$6.48	\$0.00	\$37.79
4	65	\$25.04	\$8.20	\$7.02	\$0.00	\$40.26
5	70	\$26.96	\$8.20	\$18.51	\$0.00	\$53.67
6	75	\$28.89	\$8.20	\$19.05	\$0.00	\$56.14
7	80	\$30.82	\$8.20	\$19.59	\$0.00	\$58.61
8	90	\$34.67	\$8.20	\$20.67	\$0.00	\$63.54

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PANEL & PICKUP TRUCKS DRIVER <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	08/01/2019	\$35.18	\$12.41	\$12.70	\$0.00	\$60.29
	12/01/2019	\$35.18	\$12.41	\$13.72	\$0.00	\$61.31
	06/01/2020	\$36.08	\$12.41	\$13.72	\$0.00	\$62.21
	08/01/2020	\$36.08	\$12.91	\$13.72	\$0.00	\$62.71
	12/01/2020	\$36.08	\$12.91	\$14.82	\$0.00	\$63.81
	06/01/2021	\$36.88	\$12.91	\$14.82	\$0.00	\$64.61
	08/01/2021	\$36.88	\$13.41	\$14.82	\$0.00	\$65.11
	12/01/2021	\$36.88	\$13.41	\$16.01	\$0.00	\$66.30
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i> For apprentice rates see "Apprentice- PILE DRIVER"	08/01/2019	\$48.94	\$9.90	\$21.15	\$0.00	\$79.99
PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2019	\$48.94	\$9.90	\$21.15	\$0.00	\$79.99

**Apprentice - PILE DRIVER - Local 56 Zone 1**

**Effective Date - 08/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.47	\$9.90	\$21.15	\$0.00	\$55.52
2	60	\$29.36	\$9.90	\$21.15	\$0.00	\$60.41
3	70	\$34.26	\$9.90	\$21.15	\$0.00	\$65.31
4	75	\$36.71	\$9.90	\$21.15	\$0.00	\$67.76
5	80	\$39.15	\$9.90	\$21.15	\$0.00	\$70.20
6	80	\$39.15	\$9.90	\$21.15	\$0.00	\$70.20
7	90	\$44.05	\$9.90	\$21.15	\$0.00	\$75.10
8	90	\$44.05	\$9.90	\$21.15	\$0.00	\$75.10

Notes:

**Apprentice to Journeyworker Ratio:1:5**

PIPEFITTER & STEAMFITTER	09/01/2019	\$54.69	\$10.95	\$19.74	\$0.00	\$85.38
PIPEFITTERS LOCAL 537	03/01/2020	\$56.19	\$10.95	\$19.74	\$0.00	\$86.88
	09/01/2020	\$57.69	\$10.95	\$19.74	\$0.00	\$88.38
	03/01/2021	\$59.19	\$10.95	\$19.74	\$0.00	\$89.88

**Apprentice - PIPEFITTER - Local 537**

**Effective Date - 09/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$21.88	\$10.95	\$8.00	\$0.00	\$40.83
2	45	\$24.61	\$10.95	\$19.74	\$0.00	\$55.30
3	60	\$32.81	\$10.95	\$19.74	\$0.00	\$63.50
4	70	\$38.28	\$10.95	\$19.74	\$0.00	\$68.97
5	80	\$43.75	\$10.95	\$19.74	\$0.00	\$74.44

**Effective Date - 03/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$22.48	\$10.95	\$8.00	\$0.00	\$41.43
2	45	\$25.29	\$10.95	\$19.74	\$0.00	\$55.98
3	60	\$33.71	\$10.95	\$19.74	\$0.00	\$64.40
4	70	\$39.33	\$10.95	\$19.74	\$0.00	\$70.02
5	80	\$44.95	\$10.95	\$19.74	\$0.00	\$75.64

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:\*\***

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PIPELAYER <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.40	\$7.85	\$15.85	\$0.00	\$63.10
	12/01/2019	\$40.40	\$7.85	\$15.85	\$0.00	\$64.10
	06/01/2020	\$41.39	\$7.85	\$15.85	\$0.00	\$65.09
	12/01/2020	\$42.37	\$7.85	\$15.85	\$0.00	\$66.07
	06/01/2021	\$43.39	\$7.85	\$15.85	\$0.00	\$67.09
	12/01/2021	\$44.40	\$7.85	\$15.85	\$0.00	\$68.10

For apprentice rates see "Apprentice- LABORER"

PLUMBERS & GASFITTERS <i>PLUMBERS &amp; GASFITTERS LOCAL 12</i>	09/01/2019	\$57.69	\$11.82	\$17.01	\$0.00	\$86.52
	03/01/2020	\$59.19	\$11.82	\$17.01	\$0.00	\$88.02
	09/01/2020	\$60.69	\$11.82	\$17.01	\$0.00	\$89.52
	03/01/2021	\$62.19	\$11.82	\$17.01	\$0.00	\$91.02

**Apprentice - PLUMBER/GASFITTER - Local 12**

**Effective Date - 09/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$20.19	\$11.82	\$6.16	\$0.00	\$38.17
2	40	\$23.08	\$11.82	\$6.99	\$0.00	\$41.89
3	55	\$31.73	\$11.82	\$9.53	\$0.00	\$53.08
4	65	\$37.50	\$11.82	\$11.18	\$0.00	\$60.50
5	75	\$43.27	\$11.82	\$12.88	\$0.00	\$67.97

**Effective Date - 03/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$20.72	\$11.82	\$6.16	\$0.00	\$38.70
2	40	\$23.68	\$11.82	\$6.99	\$0.00	\$42.49
3	55	\$32.55	\$11.82	\$9.53	\$0.00	\$53.90
4	65	\$38.47	\$11.82	\$11.18	\$0.00	\$61.47
5	75	\$44.39	\$11.82	\$12.88	\$0.00	\$69.09

**Notes:**

\*\* 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr  
Step4 with lic\$64.20, Step5 with lic\$71.67

**Apprentice to Journeyworker Ratio:\*\***

PNEUMATIC CONTROLS (TEMP.) <i>PIPEFITTERS LOCAL 537</i>	09/01/2019	\$54.69	\$10.95	\$19.74	\$0.00	\$85.38
	03/01/2020	\$56.19	\$10.95	\$19.74	\$0.00	\$86.88
	09/01/2020	\$57.69	\$10.95	\$19.74	\$0.00	\$88.38
	03/01/2021	\$59.17	\$10.95	\$19.74	\$0.00	\$89.86

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

PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.40	\$7.85	\$15.85	\$0.00	\$63.10
	12/01/2019	\$40.40	\$7.85	\$15.85	\$0.00	\$64.10
	06/01/2020	\$41.39	\$7.85	\$15.85	\$0.00	\$65.09
	12/01/2020	\$42.37	\$7.85	\$15.85	\$0.00	\$66.07
	06/01/2021	\$43.39	\$7.85	\$15.85	\$0.00	\$67.09
	12/01/2021	\$44.40	\$7.85	\$15.85	\$0.00	\$68.10

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWDERMAN & BLASTER <i>LABORERS - ZONE 1</i>	06/01/2019	\$40.15	\$7.85	\$15.85	\$0.00	\$63.85
	12/01/2019	\$41.15	\$7.85	\$15.85	\$0.00	\$64.85
	06/01/2020	\$42.14	\$7.85	\$15.85	\$0.00	\$65.84
	12/01/2020	\$43.12	\$7.85	\$15.85	\$0.00	\$66.82
	06/01/2021	\$44.14	\$7.85	\$15.85	\$0.00	\$67.84
	12/01/2021	\$45.15	\$7.85	\$15.85	\$0.00	\$68.85
For apprentice rates see "Apprentice- LABORER"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$48.18	\$12.00	\$15.60	\$0.00	\$75.78
	12/01/2019	\$49.33	\$12.00	\$15.60	\$0.00	\$76.93
	06/01/2020	\$50.43	\$12.00	\$15.60	\$0.00	\$78.03
	12/01/2020	\$51.58	\$12.00	\$15.60	\$0.00	\$79.18
	06/01/2021	\$52.68	\$12.00	\$15.60	\$0.00	\$80.28
	12/01/2021	\$53.83	\$12.00	\$15.60	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$48.18	\$12.00	\$15.60	\$0.00	\$75.78
	12/01/2019	\$49.33	\$12.00	\$15.60	\$0.00	\$76.93
	06/01/2020	\$50.43	\$12.00	\$15.60	\$0.00	\$78.03
	12/01/2020	\$51.58	\$12.00	\$15.60	\$0.00	\$79.18
	06/01/2021	\$52.68	\$12.00	\$15.60	\$0.00	\$80.28
	12/01/2021	\$53.83	\$12.00	\$15.60	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$32.28	\$12.00	\$15.60	\$0.00	\$59.88
	12/01/2019	\$33.07	\$12.00	\$15.60	\$0.00	\$60.67
	06/01/2020	\$33.82	\$12.00	\$15.60	\$0.00	\$61.42
	12/01/2020	\$34.60	\$12.00	\$15.60	\$0.00	\$62.20
	06/01/2021	\$35.35	\$12.00	\$15.60	\$0.00	\$62.95
	12/01/2021	\$36.14	\$12.00	\$15.60	\$0.00	\$63.74
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY MIX CONCRETE DRIVERS after 4/30/10 (Drivers Hired After 4/30/2010) <i>TEAMSTERS 25 (Metro) - Aggregate</i>	05/01/2018	\$24.15	\$9.28	\$13.59	\$0.00	\$47.02
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 25 (Metro) - Aggregate</i>	05/01/2018	\$30.66	\$9.28	\$13.59	\$0.00	\$53.53
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$47.69	\$12.00	\$15.60	\$0.00	\$75.29
	12/01/2019	\$48.83	\$12.00	\$15.60	\$0.00	\$76.43
	06/01/2020	\$49.91	\$12.00	\$15.60	\$0.00	\$77.51
	12/01/2020	\$51.05	\$12.00	\$15.60	\$0.00	\$78.65
	06/01/2021	\$52.14	\$12.00	\$15.60	\$0.00	\$79.74
	12/01/2021	\$53.28	\$12.00	\$15.60	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.40	\$7.85	\$15.85	\$0.00	\$63.10
	12/01/2019	\$40.40	\$7.85	\$15.85	\$0.00	\$64.10
	06/01/2020	\$41.39	\$7.85	\$15.85	\$0.00	\$65.09
	12/01/2020	\$42.37	\$7.85	\$15.85	\$0.00	\$66.07
	06/01/2021	\$43.39	\$7.85	\$15.85	\$0.00	\$67.09
	12/01/2021	\$44.40	\$7.85	\$15.85	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$47.69	\$12.00	\$15.60	\$0.00	\$75.29
	12/01/2019	\$48.83	\$12.00	\$15.60	\$0.00	\$76.43
	06/01/2020	\$49.91	\$12.00	\$15.60	\$0.00	\$77.51
	12/01/2020	\$51.05	\$12.00	\$15.60	\$0.00	\$78.65
	06/01/2021	\$52.14	\$12.00	\$15.60	\$0.00	\$79.74
	12/01/2021	\$53.28	\$12.00	\$15.60	\$0.00	\$80.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

ROOFER (Inc.Roofers Waterproofing &Roofers Damproofg) <i>ROOFERS LOCAL 33</i>	08/01/2019	\$44.64	\$11.50	\$15.90	\$0.00	\$72.04
	02/01/2020	\$45.92	\$11.50	\$15.90	\$0.00	\$73.32
	08/01/2020	\$47.35	\$11.50	\$15.90	\$0.00	\$74.75
	02/01/2021	\$48.78	\$11.50	\$15.90	\$0.00	\$76.18
	08/01/2021	\$50.21	\$11.50	\$15.90	\$0.00	\$77.61
	02/01/2022	\$51.64	\$11.50	\$15.90	\$0.00	\$79.04

**Apprentice - ROOFER - Local 33**

**Effective Date - 08/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.32	\$11.50	\$3.69	\$0.00	\$37.51
2	60	\$26.78	\$11.50	\$15.90	\$0.00	\$54.18
3	65	\$29.02	\$11.50	\$15.90	\$0.00	\$56.42
4	75	\$33.48	\$11.50	\$15.90	\$0.00	\$60.88
5	85	\$37.94	\$11.50	\$15.90	\$0.00	\$65.34

**Effective Date - 02/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.96	\$11.50	\$3.69	\$0.00	\$38.15
2	60	\$27.55	\$11.50	\$15.90	\$0.00	\$54.95
3	65	\$29.85	\$11.50	\$15.90	\$0.00	\$57.25
4	75	\$34.44	\$11.50	\$15.90	\$0.00	\$61.84
5	85	\$39.03	\$11.50	\$15.90	\$0.00	\$66.43

**Notes: \*\* 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1**  
 Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.  
 (Hot Pitch Mechanics' receive \$1.00 hr. above ROOFER)

**Apprentice to Journeyworker Ratio:\*\***

ROOFER SLATE / TILE / PRECAST CONCRETE <i>ROOFERS LOCAL 33</i>	08/01/2019	\$44.89	\$11.50	\$15.90	\$0.00	\$72.29
	02/01/2020	\$46.17	\$11.50	\$15.90	\$0.00	\$73.57
	08/01/2020	\$47.60	\$11.50	\$15.90	\$0.00	\$75.00
	02/01/2021	\$49.03	\$11.50	\$15.90	\$0.00	\$76.43
	08/01/2021	\$50.46	\$11.50	\$15.90	\$0.00	\$77.86
	02/01/2022	\$51.89	\$11.50	\$15.90	\$0.00	\$79.29

For apprentice rates see "Apprentice- ROOFER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SHEETMETAL WORKER <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	08/01/2019	\$48.10	\$13.20	\$24.12	\$2.56	\$87.98
	02/01/2020	\$49.75	\$13.20	\$24.12	\$2.61	\$89.68
	08/01/2020	\$51.35	\$13.20	\$24.12	\$2.66	\$91.33
	02/01/2021	\$53.00	\$13.20	\$24.12	\$2.71	\$93.03
	08/01/2021	\$54.75	\$13.20	\$24.12	\$2.76	\$94.83
	02/01/2022	\$56.50	\$13.20	\$24.12	\$2.81	\$96.63

**Apprentice - SHEET METAL WORKER - Local 17-A**

**Effective Date - 08/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	42	\$20.20	\$13.20	\$5.89	\$0.00	\$39.29
2	42	\$20.20	\$13.20	\$5.89	\$0.00	\$39.29
3	47	\$22.61	\$13.20	\$11.13	\$1.41	\$48.35
4	47	\$22.61	\$13.20	\$11.13	\$1.41	\$48.35
5	52	\$25.01	\$13.20	\$12.08	\$1.51	\$51.80
6	52	\$25.01	\$13.20	\$12.33	\$1.52	\$52.06
7	60	\$28.86	\$13.20	\$13.70	\$1.67	\$57.43
8	65	\$31.27	\$13.20	\$14.65	\$1.77	\$60.89
9	75	\$36.08	\$13.20	\$16.56	\$1.98	\$67.82
10	85	\$40.89	\$13.20	\$17.96	\$2.16	\$74.21

**Effective Date - 02/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	42	\$20.90	\$13.20	\$5.89	\$0.00	\$39.99
2	42	\$20.90	\$13.20	\$5.89	\$0.00	\$39.99
3	47	\$23.38	\$13.20	\$11.13	\$1.43	\$49.14
4	47	\$23.38	\$13.20	\$11.13	\$1.43	\$49.14
5	52	\$25.87	\$13.20	\$12.08	\$1.53	\$52.68
6	52	\$25.87	\$13.20	\$12.33	\$1.54	\$52.94
7	60	\$29.85	\$13.20	\$13.70	\$1.70	\$58.45
8	65	\$32.34	\$13.20	\$14.65	\$1.82	\$62.01
9	75	\$37.31	\$13.20	\$16.56	\$2.01	\$69.08
10	85	\$42.29	\$13.20	\$17.96	\$2.20	\$75.65

**Notes:**

Steps are 6 mos.

**Apprentice to Journeyworker Ratio:1:4**

<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
SPECIALIZED EARTH MOVING EQUIP < 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	08/01/2019	\$35.64	\$12.41	\$12.70	\$0.00	\$60.75
	12/01/2019	\$35.64	\$12.41	\$13.72	\$0.00	\$61.77
	06/01/2020	\$36.54	\$12.41	\$13.72	\$0.00	\$62.67
	08/01/2020	\$36.54	\$12.91	\$13.72	\$0.00	\$63.17
	12/01/2020	\$36.54	\$12.91	\$14.82	\$0.00	\$64.27
	06/01/2021	\$37.34	\$12.91	\$14.82	\$0.00	\$65.07
	08/01/2021	\$37.34	\$13.41	\$14.82	\$0.00	\$65.57
	12/01/2021	\$37.34	\$13.41	\$16.01	\$0.00	\$66.76
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	08/01/2019	\$35.93	\$12.41	\$12.70	\$0.00	\$61.04
	12/01/2019	\$35.93	\$12.41	\$13.72	\$0.00	\$62.06
	06/01/2020	\$36.83	\$12.41	\$13.72	\$0.00	\$62.96
	08/01/2020	\$36.83	\$12.91	\$13.72	\$0.00	\$63.46
	12/01/2020	\$36.83	\$12.91	\$14.82	\$0.00	\$64.56
	06/01/2021	\$37.63	\$12.91	\$14.82	\$0.00	\$65.36
	08/01/2021	\$37.63	\$13.41	\$14.82	\$0.00	\$65.86
	12/01/2021	\$37.63	\$13.41	\$16.01	\$0.00	\$67.05
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 550 - (Section A) Zone 1</i>	10/01/2019	\$60.48	\$9.47	\$19.60	\$0.00	\$89.55
	03/01/2020	\$61.98	\$9.47	\$19.60	\$0.00	\$91.05
	10/01/2020	\$63.48	\$9.47	\$19.60	\$0.00	\$92.55
	03/01/2021	\$64.98	\$9.47	\$19.60	\$0.00	\$94.05



**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

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

**Effective Date - 10/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$21.17	\$9.47	\$11.15	\$0.00	\$41.79
2	40	\$24.19	\$9.47	\$11.80	\$0.00	\$45.46
3	45	\$27.22	\$9.47	\$12.45	\$0.00	\$49.14
4	50	\$30.24	\$9.47	\$13.10	\$0.00	\$52.81
5	55	\$33.26	\$9.47	\$13.75	\$0.00	\$56.48
6	60	\$36.29	\$9.47	\$14.40	\$0.00	\$60.16
7	65	\$39.31	\$9.47	\$15.05	\$0.00	\$63.83
8	70	\$42.34	\$9.47	\$15.70	\$0.00	\$67.51
9	75	\$45.36	\$9.47	\$16.35	\$0.00	\$71.18
10	80	\$48.38	\$9.47	\$17.00	\$0.00	\$74.85

**Effective Date - 03/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$21.69	\$9.47	\$11.15	\$0.00	\$42.31
2	40	\$24.79	\$9.47	\$11.80	\$0.00	\$46.06
3	45	\$27.89	\$9.47	\$12.45	\$0.00	\$49.81
4	50	\$30.99	\$9.47	\$13.10	\$0.00	\$53.56
5	55	\$34.09	\$9.47	\$13.75	\$0.00	\$57.31
6	60	\$37.19	\$9.47	\$14.40	\$0.00	\$61.06
7	65	\$40.29	\$9.47	\$15.05	\$0.00	\$64.81
8	70	\$43.39	\$9.47	\$15.70	\$0.00	\$68.56
9	75	\$46.49	\$9.47	\$16.35	\$0.00	\$72.31
10	80	\$49.58	\$9.47	\$17.00	\$0.00	\$76.05

**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 <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$47.69	\$12.00	\$15.60	\$0.00	\$75.29
	12/01/2019	\$48.83	\$12.00	\$15.60	\$0.00	\$76.43
	06/01/2020	\$49.91	\$12.00	\$15.60	\$0.00	\$77.51
	12/01/2020	\$51.05	\$12.00	\$15.60	\$0.00	\$78.65
	06/01/2021	\$52.14	\$12.00	\$15.60	\$0.00	\$79.74
	12/01/2021	\$53.28	\$12.00	\$15.60	\$0.00	\$80.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$47.69	\$12.00	\$15.60	\$0.00	\$75.29
	12/01/2019	\$48.83	\$12.00	\$15.60	\$0.00	\$76.43
	06/01/2020	\$49.91	\$12.00	\$15.60	\$0.00	\$77.51
	12/01/2020	\$51.05	\$12.00	\$15.60	\$0.00	\$78.65
	06/01/2021	\$52.14	\$12.00	\$15.60	\$0.00	\$79.74
	12/01/2021	\$53.28	\$12.00	\$15.60	\$0.00	\$80.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TELECOMMUNICATION TECHNICIAN <i>ELECTRICIANS LOCAL 103</i>	03/01/2019	\$38.33	\$13.00	\$16.82	\$0.00	\$68.15

**Apprentice - TELECOMMUNICATION TECHNICIAN - Local 103**

**Effective Date - 03/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$15.33	\$13.00	\$0.46	\$0.00	\$28.79
2	40	\$15.33	\$13.00	\$0.46	\$0.00	\$28.79
3	45	\$17.25	\$13.00	\$13.42	\$0.00	\$43.67
4	45	\$17.25	\$13.00	\$13.42	\$0.00	\$43.67
5	50	\$19.17	\$13.00	\$13.73	\$0.00	\$45.90
6	55	\$21.08	\$13.00	\$14.03	\$0.00	\$48.11
7	60	\$23.00	\$13.00	\$14.34	\$0.00	\$50.34
8	65	\$24.91	\$13.00	\$14.66	\$0.00	\$52.57
9	70	\$26.83	\$13.00	\$14.96	\$0.00	\$54.79
10	75	\$28.75	\$13.00	\$15.27	\$0.00	\$57.02

**Notes:**

**Apprentice to Journeyworker Ratio:1:1**

TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	08/01/2019	\$53.34	\$10.75	\$21.30	\$0.00	\$85.39
	02/01/2020	\$53.98	\$10.75	\$21.30	\$0.00	\$86.03
	08/01/2020	\$55.33	\$10.75	\$21.45	\$0.00	\$87.53
	02/01/2021	\$55.97	\$10.75	\$21.45	\$0.00	\$88.17
	08/01/2021	\$57.37	\$10.75	\$21.61	\$0.00	\$89.73
	02/01/2022	\$57.96	\$10.75	\$21.61	\$0.00	\$90.32

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile**

**Effective Date - 08/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.67	\$10.75	\$21.30	\$0.00	\$58.72
2	60	\$32.00	\$10.75	\$21.30	\$0.00	\$64.05
3	70	\$37.34	\$10.75	\$21.30	\$0.00	\$69.39
4	80	\$42.67	\$10.75	\$21.30	\$0.00	\$74.72
5	90	\$48.01	\$10.75	\$21.30	\$0.00	\$80.06

**Effective Date - 02/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.99	\$10.75	\$21.30	\$0.00	\$59.04
2	60	\$32.39	\$10.75	\$21.30	\$0.00	\$64.44
3	70	\$37.79	\$10.75	\$21.30	\$0.00	\$69.84
4	80	\$43.18	\$10.75	\$21.30	\$0.00	\$75.23
5	90	\$48.58	\$10.75	\$21.30	\$0.00	\$80.63

**Notes:**

**Apprentice to Journeyworker Ratio:1:3**

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2019	\$40.50	\$7.85	\$16.05	\$0.00	\$64.40
	12/01/2019	\$41.50	\$7.85	\$16.05	\$0.00	\$65.40
	06/01/2020	\$42.49	\$7.85	\$16.05	\$0.00	\$66.39
	12/01/2020	\$43.47	\$7.85	\$16.05	\$0.00	\$67.37
	06/01/2021	\$44.49	\$7.85	\$16.05	\$0.00	\$68.39
	12/01/2021	\$45.50	\$7.85	\$16.05	\$0.00	\$69.40

For apprentice rates see "Apprentice- LABORER"

TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2019	\$39.22	\$7.85	\$16.05	\$0.00	\$63.12
	12/01/2019	\$40.22	\$7.85	\$16.05	\$0.00	\$64.12
	06/01/2020	\$41.21	\$7.85	\$16.05	\$0.00	\$65.11
	12/01/2020	\$42.19	\$7.85	\$16.05	\$0.00	\$66.09
	06/01/2021	\$43.21	\$7.85	\$16.05	\$0.00	\$67.11
	12/01/2021	\$44.22	\$7.85	\$16.05	\$0.00	\$68.12

For apprentice rates see "Apprentice- LABORER"

TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2019	\$39.10	\$7.85	\$16.05	\$0.00	\$63.00
	12/01/2019	\$40.10	\$7.85	\$16.05	\$0.00	\$64.00
	06/01/2020	\$41.09	\$7.85	\$16.05	\$0.00	\$64.99
	12/01/2020	\$42.07	\$7.85	\$16.05	\$0.00	\$65.97
	06/01/2021	\$43.09	\$7.85	\$16.05	\$0.00	\$66.99
	12/01/2021	\$44.10	\$7.85	\$16.05	\$0.00	\$68.00

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$47.69	\$12.00	\$15.60	\$0.00	\$75.29
	12/01/2019	\$48.83	\$12.00	\$15.60	\$0.00	\$76.43
	06/01/2020	\$49.91	\$12.00	\$15.60	\$0.00	\$77.51
	12/01/2020	\$51.05	\$12.00	\$15.60	\$0.00	\$78.65
	06/01/2021	\$52.14	\$12.00	\$15.60	\$0.00	\$79.74
	12/01/2021	\$53.28	\$12.00	\$15.60	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	08/01/2019	\$36.22	\$12.41	\$12.70	\$0.00	\$61.33
	12/01/2019	\$36.22	\$12.41	\$13.72	\$0.00	\$62.35
	06/01/2020	\$37.12	\$12.41	\$13.72	\$0.00	\$63.25
	08/01/2020	\$37.12	\$12.91	\$13.72	\$0.00	\$63.75
	12/01/2020	\$37.12	\$12.91	\$14.82	\$0.00	\$64.85
	06/01/2021	\$37.92	\$12.91	\$14.82	\$0.00	\$65.65
	08/01/2021	\$37.92	\$13.41	\$14.82	\$0.00	\$66.15
	12/01/2021	\$37.92	\$13.41	\$16.01	\$0.00	\$67.34
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	06/01/2019	\$51.38	\$7.85	\$16.45	\$0.00	\$75.68
	12/01/2019	\$52.38	\$7.85	\$16.45	\$0.00	\$76.68
	06/01/2020	\$53.37	\$7.85	\$16.45	\$0.00	\$77.67
	12/01/2020	\$54.35	\$7.85	\$16.45	\$0.00	\$78.65
	06/01/2021	\$55.37	\$7.85	\$16.45	\$0.00	\$79.67
	12/01/2021	\$56.38	\$7.85	\$16.45	\$0.00	\$80.68
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	06/01/2019	\$53.38	\$7.85	\$16.45	\$0.00	\$77.68
	12/01/2019	\$54.38	\$7.85	\$16.45	\$0.00	\$78.68
	06/01/2020	\$55.37	\$7.85	\$16.45	\$0.00	\$79.67
	12/01/2020	\$56.35	\$7.85	\$16.45	\$0.00	\$80.65
	06/01/2021	\$57.37	\$7.85	\$16.45	\$0.00	\$81.67
	12/01/2021	\$58.38	\$7.85	\$16.45	\$0.00	\$82.68
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2019	\$43.45	\$7.85	\$16.45	\$0.00	\$67.75
	12/01/2019	\$44.45	\$7.85	\$16.45	\$0.00	\$68.75
	06/01/2020	\$45.44	\$7.85	\$16.45	\$0.00	\$69.74
	12/01/2020	\$46.42	\$7.85	\$16.45	\$0.00	\$70.72
	06/01/2021	\$47.44	\$7.85	\$16.45	\$0.00	\$71.74
	12/01/2021	\$48.45	\$7.85	\$16.45	\$0.00	\$72.75
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2019	\$45.45	\$7.85	\$16.45	\$0.00	\$69.75
	12/01/2019	\$46.45	\$7.85	\$16.45	\$0.00	\$70.75
	06/01/2020	\$47.44	\$7.85	\$16.45	\$0.00	\$71.74
	12/01/2020	\$48.42	\$7.85	\$16.45	\$0.00	\$72.72
	06/01/2021	\$49.44	\$7.85	\$16.45	\$0.00	\$73.74
	12/01/2021	\$50.45	\$7.85	\$16.45	\$0.00	\$74.75
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	08/01/2019	\$35.64	\$12.41	\$12.70	\$0.00	\$60.75
	12/01/2019	\$35.64	\$12.41	\$13.72	\$0.00	\$61.77
	06/01/2020	\$36.54	\$12.41	\$13.72	\$0.00	\$62.67
	08/01/2020	\$36.54	\$12.91	\$13.72	\$0.00	\$63.17
	12/01/2020	\$36.54	\$12.91	\$14.82	\$0.00	\$64.27
	06/01/2021	\$37.34	\$12.91	\$14.82	\$0.00	\$65.07
	08/01/2021	\$37.34	\$13.41	\$14.82	\$0.00	\$65.57
	12/01/2021	\$37.34	\$13.41	\$16.01	\$0.00	\$66.76
WAGON DRILL OPERATOR <i>LABORERS - ZONE 1</i>	06/01/2019	\$39.40	\$7.85	\$15.85	\$0.00	\$63.10
	12/01/2019	\$40.40	\$7.85	\$15.85	\$0.00	\$64.10
	06/01/2020	\$41.39	\$7.85	\$15.85	\$0.00	\$65.09
	12/01/2020	\$42.37	\$7.85	\$15.85	\$0.00	\$66.07
	06/01/2021	\$43.39	\$7.85	\$15.85	\$0.00	\$67.09
	12/01/2021	\$44.40	\$7.85	\$15.85	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER"						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2019	\$48.18	\$12.00	\$15.60	\$0.00	\$75.78
	12/01/2019	\$49.33	\$12.00	\$15.60	\$0.00	\$76.93
	06/01/2020	\$50.43	\$12.00	\$15.60	\$0.00	\$78.03
	12/01/2020	\$51.58	\$12.00	\$15.60	\$0.00	\$79.18
	06/01/2021	\$52.68	\$12.00	\$15.60	\$0.00	\$80.28
	12/01/2021	\$53.83	\$12.00	\$15.60	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS &amp; GASFITTERS LOCAL 12</i>	09/01/2019	\$57.69	\$11.82	\$17.01	\$0.00	\$86.52
	03/01/2020	\$59.19	\$11.82	\$17.01	\$0.00	\$88.02
	09/01/2020	\$60.69	\$11.82	\$17.01	\$0.00	\$89.52
	03/01/2021	\$62.19	\$11.82	\$17.01	\$0.00	\$91.02
	For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"					
<b>Outside Electrical - East</b>						
CABLE TECHNICIAN (Power Zone) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2019	\$28.83	\$8.75	\$1.86	\$0.00	\$39.44
	08/30/2020	\$29.67	\$9.25	\$1.89	\$0.00	\$40.81
For apprentice rates see "Apprentice- LINEMAN"						
CABLEMAN (Underground Ducts & Cables) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2019	\$40.84	\$8.75	\$10.02	\$0.00	\$59.61
	08/30/2020	\$42.03	\$9.25	\$10.27	\$0.00	\$61.55
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN CDL <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2019	\$33.64	\$8.75	\$9.86	\$0.00	\$52.25
	08/30/2020	\$34.62	\$9.25	\$10.07	\$0.00	\$53.94
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2019	\$26.43	\$8.75	\$1.79	\$0.00	\$36.97
	08/30/2020	\$27.20	\$9.25	\$1.82	\$0.00	\$38.27
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class A CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2019	\$40.84	\$8.75	\$14.10	\$0.00	\$63.69
	08/30/2020	\$42.03	\$9.25	\$14.35	\$0.00	\$65.63
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class B CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2019	\$36.04	\$8.75	\$10.65	\$0.00	\$55.44
	08/30/2020	\$37.09	\$9.25	\$10.87	\$0.00	\$57.21
For apprentice rates see "Apprentice- LINEMAN"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2019	\$21.62	\$8.75	\$1.65	\$0.00	\$32.02
	08/30/2020	\$22.25	\$9.25	\$1.67	\$0.00	\$33.17
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN -Inexperienced (<2000 Hrs.) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2019	\$26.43	\$8.75	\$1.79	\$0.00	\$36.97
	08/30/2020	\$27.20	\$9.25	\$1.82	\$0.00	\$38.27
For apprentice rates see "Apprentice- LINEMAN"						
JOURNEYMAN LINEMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2019	\$48.05	\$8.75	\$17.19	\$0.00	\$73.99
	08/30/2020	\$49.45	\$9.25	\$17.48	\$0.00	\$76.18

**Apprentice - LINEMAN (Outside Electrical) - East Local 104**

**Effective Date - 09/01/2019**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$28.83	\$8.75	\$3.36	\$0.00	\$40.94
2	65	\$31.23	\$8.75	\$3.44	\$0.00	\$43.42
3	70	\$33.64	\$8.75	\$3.51	\$0.00	\$45.90
4	75	\$36.04	\$8.75	\$5.08	\$0.00	\$49.87
5	80	\$38.44	\$8.75	\$5.15	\$0.00	\$52.34
6	85	\$40.84	\$8.75	\$5.23	\$0.00	\$54.82
7	90	\$43.25	\$8.75	\$7.30	\$0.00	\$59.30

**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
TREE TRIMMER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/31/2016	\$18.51	\$3.55	\$0.00	\$0.00	\$22.06
This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company's equipment, and (c) by a person who is using hand or mechanical cutting methods and is not on the ground. This classification does not apply to wholesale tree removal.						
TREE TRIMMER GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/31/2016	\$16.32	\$3.55	\$0.00	\$0.00	\$19.87

**Classification****Effective Date   Base Wage   Health   Pension   Supplemental  
Unemployment   Total Rate**

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

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**Additional Apprentices Information:**

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. 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.

**PROJECT MANUAL**

**ROBBINS LIBRARY  
EXTERIOR ENVELOPE REPAIRS –  
PHASE 1A  
ARLINGTON, MASSACHUSETTS**

**TOWN OF ARLINGTON**

**Bid No. 19-58**

**Bid Documents**

November, 07 2019

**CBI Consulting, LLC**

**A Vidaris Company**

**250 Dorchester Avenue**

**Boston, Massachusetts 02127**

**Tel (617) 268-8977**

**Fax (617) 464-2971**

CBI JOB NUMBER: 17152-A



# **TECHNICAL SPECIFICATIONS**

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 11 00**

**SUMMARY OF WORK**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 DESCRIPTION OF WORK - GENERAL

- A. In general, the Contractor shall supply all material, labor, equipment, insurance, temporary protection, tools and appliances necessary for the proper completion of the work as described in the Plans and Specifications, in accordance with good construction practice, and as required by the materials manufacturers.
- B. Supply all shoring and protection necessary to protect the occupants, building area, building systems, and landscape areas. All means and methods are the responsibility of the contractor. The Contractor is solely responsible for safety on the job site.
- C. The work includes but is not limited to:
  - 1. Route and clean existing cracks in any sandstone (1890's building) detail or element, and fill cracks with injection restoration repair mortar. Total quantity of 50 lineal feet in select and random locations across all elevations as selected by architect.
    - a. Refer to Unit Prices – Specification Section 01 22 00.

**SUMMARY OF WORK**

2. Replace existing sealant and mortar joints of the exterior granite stone stairs, at main entrance of the 1890's Library Building. Cut, Remove and dispose of 100% all existing vertical and horizontal joint sealant, including underlying mortar a minimum of 1-1/2-inches or until sound mortar from all granite stone stair. Apply new pointing mortar to within 1/2-inch of the surface and apply polyurethane sealant to all granite stone joints and concrete landing joints. Stairs shall be power washed cleaned.
3. Route and clean existing cracks in any Architectural Cast Stone (1930s Building) Detail or Element, and fill cracks with injection restoration repair mortar. Total quantity of 25 lineal feet in select and random locations across all elevation selected by the Architect.
  - a. Refer to Unit Prices – Specification Section 01 22 00.
4. Remove and dispose of existing architectural cast stone window head in Two (2) locations as selected by architect. Temporarily shore and support opening. Fabricate and install new reinforced architectural precast header to match, size, texture and color.
  - a. Refer to Unit Prices – Specification Section 01 22 00.
  - b. Refer to Deduct Alternate No. 3.
5. Cut out and dispose of spalls, chips and delamination's in the existing Architectural Cast Stone (1930's Building) window sills. Cut out a minimum 1/2" deep & square off all edges. Clean surface & apply single component, cementitious mineral based repair mortar. Total quantity of 208 cubic inches in select and random locations across all elevation selected by the Architect.
  - a. Refer to Unit Prices – Specification Section 01 22 00.
6. Re-seal existing aluminum spandrel panels and glass panels at 1990's building.
  - a. Cut, remove and dispose of existing rubber gaskets flush with panel frame.
  - b. Apply new backer rod where gaskets are missing between the panel and frame.
  - c. Clean and prime surfaces and apply non-sag single component silicone sealant. Color to be selected by architect from full range of custom colors.
  - d. Refer to Deduct Alternate No. 2.

## SUMMARY OF WORK

7. Cut out and dispose spalls, chips and delamination in the Architectural Cast in place stone exist stairs of the 1930's Building. Cut out a minimum 1" deep & square off all edges. Clean surface & apply single component, cementitious mineral based repair mortar.
  - a. Refer to Deduct Alternate No. 1.
8. Replace existing sealant and mortar joints in exit stair of 1930's building. Cut, Remove and dispose of 100% all existing vertical and horizontal joint sealants, including underlying mortar a minimum of 1-1/2 inches or until sound mortar from all granite stone stair and concrete landing joint. Apply new pointing mortar to within 1/2-inch of the surface and apply polyurethane sealant to all granite stone joints. Stone shall be power washed clean.
  - a. Refer to Deduct Alternate No. 1.

#### 1.03 INTENT OF THE PROJECT MANUAL

- A. Whenever "Furnish", "Install", or "Provide" is used in the Contract Documents, it shall mean to erect, install, connect, make operative, and supply all labor and materials, including miscellaneous fittings, hardware, and accessories necessary to complete the installation of the specified item.
- B. The scope of work is indicated in the Project Manual. Areas of required work indicated on the drawings are for illustration and are not to be interpreted as representing quantities, exact locations, and/or the extent of work required. The Owner makes no representation of the exact quantities of work required. It shall be the responsibility of the Contractor to do all work to the complete fulfillment of the requirements of the Project Manual.

#### 1.04 ERRORS, OMISSIONS, AND CONFLICTS IN THE PROJECT MANUAL

- A. In the case of conflicts in the Drawings and the Specifications noticed by the Contractor, the Architect shall be notified immediately in writing of such errors and/or omissions. In no case shall the Contractor proceed without written authorization from the Architect.

#### 1.05 UNFORESEEN FIELD CONDITIONS

- A. In the case of unforeseen field conditions, the Contractor shall notify the Owner and Architect immediately in writing of such conditions. In no case shall the Contractor proceed without written authorization from the Architect. If such unforeseen conditions result in additional expense, the Contractor shall not proceed without the written approval of the Owner.

#### PART 2 - PRODUCTS - NOT USED

### SUMMARY OF WORK

ROBBINS LIBRARY EXTERIOR ENVELOPE REPAIRS -PHASE 1A  
BID NO. 19-58  
ARLINGTON, MASSACHUSETTS  
CBI JOB NO.: 17152- A

CBI Consulting, LLC  
Boston, Massachusetts  
Tel: (617) 268-8977  
Fax: (617) 464-2971

PART 3 - EXECUTION - NOT USED

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 22 00**

**UNIT PRICES**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. The Unit Prices for items set forth in the Schedule of Unit Prices shall be used to determine adjustments to the Contract Sum when changes in the Work involving said items are made in accordance with Article 8 of the General Conditions and other sections of the Contract Documents.
- B. Unit Prices listed under ADDITIONS have been computed to include net cost plus overhead, profit, and bond and all other charges required to complete the work item.
- C. Unit Prices net cost includes the cost of all labor, materials, equipment, disposal, and all other costs required to complete the work item.
- D. Materials, methods of installation, and definitions of terms set forth under the various Unit Price items in the Schedule of Unit Prices shall be as indicated in the Contract Documents.
- E. Unit costs will not be adjusted if the quantities approved in the field by the Architect vary from the base contract quantities listed in the Project Manual.

1.02. APPLICABILITY OF UNIT PRICES

- A. The payment lines shall be determined in the field by the Architect.
- B. Unit Prices are for more work or less work than is included in the base contract for the various tasks included. Quantities to be included in the base contract are listed in the Unit Price Schedule.
- C. Prior to commencing removal or placement of materials set forth in the Schedule of Unit Prices, the Contractor shall notify the Architect in sufficient time to permit proper measurements to be taken on behalf of the Owner. Only quantities which have been approved in writing by the Architect will be considered in the determination of adjustments to the Contract Sum. Unit costs shall include the pro rata share of all costs associated with doing the work, including staging, insurance, overhead, and profit, as well.
- D. Performance of Work which is not required under the Contract Documents or which is not authorized by Change Order, whether or not such Work item is set forth hereunder as a Unit Price item, shall not be considered cause for extra payment. The Contractor will be held fully responsible for such unauthorized

work, including the performance of all corrective measures required by the Architect.

E. See attached Unit Price Schedule.

**UNIT PRICE SCHEDULE**

#	DESCRIPTION OF WORK	UNIT	BASE BID QUANTITY	ADD / DEDUCT PRICE (Insert only one number)
1.	Route and clean existing cracks in any sandstone (1890's building) detail or element, and fill cracks with injection restoration repair mortar.	LF	50	
2.	Route and clean existing cracks in any Architectural cast stone (1930's building) detail or element, and fill cracks with injection restoration repair mortar.	LF	25	
3.	Remove and dispose of existing Architectural cast stone window head in two (2) location as selected by the Architect. Temporarily shore and support opening, fabricate and install new reinforced Architectural precast header to match size, texture and color.	EA	2	
4.	Cut out and dispose of spalls, chips and delamination's in the existing Architectural Cast Stone (1930's Building) window sills. Cut out a minimum 1/2" deep & square off all edges.	CI	208	

G. All repair locations will be determined and marked in the field by the Engineer. Repairs will be located at small individual locations throughout the entire scope area. Unit Price work performed without the approval of the Engineer will not be paid for.

H. The Owner reserves that right to increase or decrease the unit cost quantities without any adjustment in the unit costs.

I. Unit costs include pro-rata share of Contractor's, general conditions, staging, insurance, bond, overhead, and profit, etc.

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 23 00**

**ALTERNATES**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- 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.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 ALTERNATE SCOPE

- A. This Section lists the Alternates which appear in the Contract Documents. Consult the individual sections of the detailed requirements of each Alternate.
- B. Bid prices for each Alternate shall include its pro rata share of all overhead, profit, and all other expenses incidental to the Work under each Alternate.
- C. The Contractor and Subcontractors shall be responsible for examining the scope of each Alternate generally defined herein and for recognizing modifications to the Work caused by the Alternates and including the cost thereof in the bid price.
- D. DEDUCT ALETERNATES are as follows, see plans for scope area:
  - 1. Deduct Alternate No.1 – Eliminate all repair work associated to Entry/Exit stairs of the 1930's Building, including replacing thee existing sealant and mortar joints.
  - 2. Deduct Alternate No. 2 – Eliminate all work associated to reseal the existing

**ALTERNATES**

**01 23 00 - 1**



ROBBINS LIBRARY EXTERIOR ENVELOPE REPAIRS -PHASE 1A  
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aluminum spandrel panels for the 1990's building.

3. Deduct Alternate No. 3 – Eliminate two (2) locations of work associated with replacing Architectural cast stone window heads.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 31 13**

**PROJECT COORDINATION**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01000 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 COORDINATION AND PROCEDURES

- A. The safety and welfare of the employees and guests of the Robbins Library are the utmost concern of the project. All work by the Contractor, his Sub-Contractors, Sub-Bidders, suppliers, and employees shall be performed in a way that will safeguard this concern. Safety is the sole responsibility of the Contractor on the jobsite. Extraordinary care must be taken throughout the project to coordinate work activities with Library schedules, procedures, and activities.
- B. The General Bidder, all the File Sub-Bidders, and all the sub-contractors are hereby referred to Section 00100.1.18 A and B of the Specification, which indicates that there is enough time, in advance of mobilization on site, for all the products to be procured ahead of the work, for this project. Please also take note of Section 01300.1.05.A which indicates that a Schedule of Shop Drawings must be submitted within 10 days of the Date of Commencement. It is expected that all the long lead time items will have shop drawings prepared immediately and that all the long lead time products will be ordered as soon as possible so that the progress of the work is not affected nor will the schedule be compromised by delivery schedules.

- C. All construction activities and deliveries to the Library are to be coordinated with the Director.
- D. Pre-construction meetings shall be held with the Town, Library personnel, Contractor and Architect, to coordinate locations for dumpsters, deliveries, worker parking, material storage, as well as to discuss safety, scheduling, procedures, and to emphasize 1.02.A, above.
- E. Contractor shall restrict hazardous items and activities to locations that will have the least impact on the daily operations of the Library. All material storage, locations of cranes, dumpsters, workers access, etc. will be only in areas approved by the Town and Library Director.
- F. Install, at a minimum, when work is performed overhead, covered walkway protection at all entrance and exit doors, at areas of construction, to the facility during construction activities, 10'-0" minimum length, of pipe scaffolding, plywood, planking, orange plastic fencing, and yellow safety tape. Safety is the sole responsibility of the contractor, regardless of the information in this specification.
- G. Contractor shall cover all interior spaces where work will occur, with minimum 6-mil poly tarps before operations commence above to protect interior surfaces and equipment from debris and dust. All protections shall be removed immediately upon completion of the work. Dust and debris not contained by the tarps shall be immediately vacuumed to the satisfaction of the Town. Damage as a result of the work will be repaired to the satisfaction of and at no additional cost to the owner.
- H. Contractor shall provide signage and other safety barriers at the site adequate to support their safety program.
- I. Contractor shall update the Construction schedule monthly. Requisitions for payment must be accompanied by an updated schedule. The on-site superintendent shall meet with the Director or building representative daily at to inform them of the daily progress and review the schedule for the next three (3) days.

### 1.03 CORI REQUEST FORM

- A. The General Bidder, all the File Sub-Bidders, and all the sub-contractors are hereby notified that CORI checks are required for all personnel that will be working on site. It is each individual contractor's responsibility to submit the required paperwork to the State, in advance of the work, so as not to delay the schedule for any possible employee that will access the site. Approval by the state for must be delivered to the Owner in advance of the work. Payments will be withheld to the contractor if he/she fails to submit the proper CORI certifications in advance of the work.

#### 1.04 SCHEDULING

- A. Time is of the essence in this project.
- B. Temperature is a critical factor in the construction work. Adhere to manufacturer's specifications.
- C. Within five (5) days after the Contractor has received the Owner's Notice to Proceed, and before the commencement of any work, the Contractor shall transmit the proposed construction schedule to the Owner and Architect for review. If any change in the work will alter agreed upon schedules, the Contractor shall immediately notify the Owner and Architect in writing.
- D. The Contractor shall confine his/her apparatus, storage of materials, and operation of his/her workmen to limits as required by the Owner, and shall not unreasonably encumber the premises with these materials. He/she shall keep all access roads and walks clear of construction equipment, materials, and debris of any kind. He shall repair any and all damage to access roads, walks, the building facade and roof caused by construction operations, and leave them in at least as good condition as originally found. All operations shall be confined within the property. All delivery and construction operations shall be conducted so as to avoid all possible obstruction of the work and building operations. The Contractor shall meet regularly with the Owner to coordinate the use of the Site.
- E. The Contractor must request approval from the Town of Arlington and Library Director to work after hours, overnight, or on Saturdays at no additional expense to the owner. No work can be performed on Sunday.

#### 1.05 SUBCONTRACTORS

- A. Subcontractors are subject to approval by the Owner.

#### 1.06 CONSTRUCTION REVIEW

- A. All materials and workmanship shall be subject to review by the Architect and all designated representatives of the Owner. Such review may take place at any time during the construction, and wherever work relating to this project is underway. The Contractor shall notify the Architect of any approaching stage of the work likely to require his/her attention, and the Architect shall have the right to reject all defective or non-conforming workmanship and material, and to require its replacement.
- B. If any unreviewed work is covered up without approval, the Contractor shall bear the costs of uncovering it upon request.

#### 1.07 CODES

- A. Codes, standards, and publications of private and public bodies mentioned in these specifications, and other such standards and specifications, refer to the latest edition thereof at the time of taking bids unless a specific edition is designated, and shall be considered and integral part of the Contract Documents.

#### 1.08 COORDINATION OF WORK

- A. Contractor shall coordinate all construction work with Town of Arlington Representatives and the Library Director or designated Town personnel.
- B. Contractor is responsible for obtaining all building permits. The Building Permit fee is waived.
- C. Contractor is responsible securing all street and sidewalk permits, and police details as required as well as any other requirements that may be imposed by the Town of Arlington, including all costs.
  - 1. Sidewalk, Street Permits and Police Details will be required along Massachusetts Avenue and Peg Spengler Way.
- D. The Contractor is responsible for shall be responsible for the protection and security of the opening prior to the installation of new window glass, if left open to the weather.

#### 1.09 SPECIFICATION DISTRIBUTION TO WORKMEN

- A. A complete copy of the project manual, including plans and specifications shall be kept at the construction site at all times.
- B. At the direction of the Architect, the Contractor shall photocopy various parts of pertinent Sections of the Project Manual to be handed out to each tradesman.

#### 1.10 FIELD MEASUREMENTS

- A. Before ordering any materials or performing any work, the Contractor or his/her subcontractors shall inspect all existing conditions and perform all measurements at the building. No extra charge or compensation will be allowed because of differences between the drawings and the actual dimensions. Any differences between the Project Manual and the actual conditions found shall be submitted to the Architect for his/her decision before proceeding with the work.

#### 1.11 CUTTING AND PATCHING

- A. The work to be performed under this Contract shall include all cutting and patching necessary to accommodate new work.

#### 1.12 PERMITS

- A. All fees and procurement of building permits shall be the responsibility of the Contractor. Requests for inspections by the Building Inspector and the obtaining of required signatures by Inspection on permits is the responsibility of the Contractor.

1. Building Permit Fee is Waived.

#### 1.13 DUMPING

- A. The contractor shall submit an affidavit certifying legal and proper dumping and disposal (including locations) of all materials from the project.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 33 00**

**SUBMITTALS**

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1- GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be provided complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually provided in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated into the work shall be new and of the best grade of their respective kinds.
- E. Consult the individual sections of the specifications for the specific submittals required under those sections and for further details and descriptions of the requirements.

1.02 GENERAL PROCEDURES FOR SUBMITTALS

- A. Timeliness - The Contractor shall transmit each submittal to the Designer sufficiently in advance of performing related Work or other applicable activities so that the installation is not delayed by processing times, including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Architect in advance of the Work.
- B. Sequence - The Contractor shall transmit each submittal in a sequence which will not result in the Architect's approval having to be later modified or rescinded by reason of subsequent submittals which should have been processed earlier or concurrently for coordination.

- C. The Contractor's Review - Only submittals received from and bearing the stamp of approval of the Contractor will be considered for review by the Architect. Submittals shall be accompanied by a transmittal notice stating name of Project, date of submittal, "To", "From" (Contractor, Subcontractor, Installer, Manufacturer, Supplier), Specification Section, or Drawing No. to which the submittal refers, purpose (first submittal, resubmittal), description, remarks, distribution record, and signature of transmitter.
- D. Architect's Action - The Architect will review the Contractor's submittals and return them with one of the following actions recorded thereon by appropriate markings:
1. Final Unrestricted Release: Where marked "Approved" the Work covered by the submittal may proceed provided it complies with the requirements of the Contract Documents.
  2. Final-But-Restricted Release: When marked "Approved as Noted" the Work may proceed provided it complies with the Architect's notations or corrections on the submittal and complies with the requirements of the Contract Documents. Acceptance of the Work will depend on these compliances.
  3. Returned for Resubmittal: When marked "Revise and Resubmit" or "Disapproved" the Work covered by the submittal (such as purchasing, fabrication, delivery, or other activity) should not proceed. The submittal should be revised or a new submittal resubmitted without delay (no limit to number of resubmissions), in accordance with the Designer's notations stating the reasons for returning the submittal.
- E. Processing - All costs for printing, preparing, packaging, submitting, resubmitting, and mailing, or delivering submittals required by this contract shall be included in the Contract Sum.

### 1.03 OR EQUALS

- A. Definition - Whenever a specification section names one or more brands for a given item, and the Contractor wishes to submit, for consideration, another brand, the submission shall be considered an "or-equal" or a "material substitution". For the purposes of this Contract, the terms "or-equal" and "material substitution" shall be considered synonymous.
- B. In no case may an item be provided on the Work other than the item named or described, unless the Architect, with the Owner's written concurrence, shall consider the item equal to the item so named or described, as provided by M.G.L. c.30 § 39M.



- C. The equality of items offered as "equal" to items named or described shall be proved to the satisfaction of the Architect, including all research and full documentation, at the expense of the Contractor submitting the substitution.
- D. The Designer and/or the Owner may require that full size samples of both the specified and proposed products be submitted for review and evaluation. The Contractor shall bear full cost for providing, delivering, and disposal of all such samples.
- E. The Contractor shall assume full responsibility for the performance of any item submitted as an "Or-Equal" and assume the costs of any changes in any Work which may be caused by such substitution.
- F. Or Equal Approval Process - On the transmittal, or on a separate sheet attached to the submission, the Contractor shall direct attention to any deviations, including minor limitations and variations, from the Contract Documents.
  - 1. The Contractor shall submit to the Architect for consideration of any or-equal substitution a written point-by-point comparison containing the name and full particulars of the proposed product and the product named or described in the Contract Documents.
  - 2. Such submittal shall in no event be made later than ten (10) calendar days prior to the incorporation of the item into the Work. In any case in which the time period specified in the Contract Documents from the Notice to Proceed to Substantial Completion is less than 30 days, this requirement can be waived by the Architect.
  - 3. Upon receipt of a written request for approval of an or-equal substitution, the Architect shall investigate whether the proposed item shall be considered equal to the item named or described in the Contract Documents. Upon conclusion of the investigation, the Architect shall promptly advise the Contractor that the item is, or is not, considered acceptable as on Or-Equal substitution. Such written notice must have the concurrence of the Owner.

#### 1.04 SUBMISSION OF SHOP DRAWINGS

- A. Shop Drawings shall be complete, giving all information necessary or requested in the individual section of the specifications. They shall also show all adjoining Work, other work affected, and details of connection thereto, including hardware, flashing, waterproofing, and all utilities.
- B. Shop Drawings shall be for whole systems. Partial submissions will not be accepted.

- C. The Architect reserves the right to review and approve shop drawings only after approval of related product data and samples.
- D. Shop drawings shall be properly identified and contain the name of the project, name of the firm submitting the shop drawings, shop drawing number, date of shop drawings and revisions, Contractor's stamp of approval, and sufficient spaces near the title block for the Architect's stamp.
- E. The Contractor shall submit to the Architect seven (7) black line prints of each shop drawing. Transparency and prints shall be mailed or delivered in roll form. Each submittal shall be accompanied by a transmittal notice.
- F. When the transparency is returned by the Architect with the stamp "Revise and Resubmit" or "Disapproved", the Contractor shall correct the original drawing or prepare a new drawing and resubmit seven (7) prints thereof to the Architect for approval. This procedure shall be repeated until the Architect's approval is obtained. No limit.
- G. The Contractor shall maintain one full set of approved shop drawings at the site.
- H. Photo copies of the bid documents are not acceptable as shop drawings.
- I. Provide shop drawings for every item to be installed or repaired in the entire project, whether or not indicated in the spec section.

1.05 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES (SUBMITTALS AND DISTRIBUTION)

- A. The General Contractor, within ten (10) working days after the commencement of work shall prepare and submit for the Architect's approval a schedule of Shop Drawings, Product Data and Samples required to be submitted for the work. The schedule shall indicate by trade the date by which final approval of each item must be obtained, and shall be revised as required by conditions of the work, subject to Architect's approval. The schedule of Shop Drawings shall correspond to the Construction Schedule so that the submissions relate to the time when the products and/or systems will be required on the site. The Architect will not approve a Schedule which calls for out of sequence submittals.
- B. General Contractor shall submit Shop Drawing, product data and samples accompanied by the General Contractor's Shop Drawing, Product Data and Sample Transmittals form.
- C. Preparation of Submittal Form: Fill out transmittal form in the following manner using a typewriter or word processor, and retain one copy – General Contractor's first file:

- |     |                           |   |
|-----|---------------------------|---|
| 1.  | General Contr.<br>Job No. | General Contractor's name and job number.   |
| 2.  | Spec. Section             | The Specification Section number where item is specified – do not submit items from more than one Specification Section on the same form. |
| 3.  | Submitted by              | Name of General Contractor's employee responsible for the General Contractor's review.  |
| 4.  | Project/No.               | Project name and Architect's project number.  |
| 5.  | Transmittal No.           | Transmittal numbers shall be consecutive for the project.   |
| 6.  | Date Submitted            | Date leaving General Contractor's office.   |
| 7.  | Subcontractor             | Name of firm preparing original documents (shop drawings or sample).  |
| 8.  | Submission No.            | 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> , etc. depending on previous submission for same item (see Resubmittal procedure).    |
| 9.  | Spec. Sec. Para.          | Specific paragraph number which item as Specified.  |
| 10. | Copies & Type             | Number of copies submitted and type of material submitted (sepia, print, brochure or sample, etc.).                                       |
| 11. | Contr.'s Remarks          | Note exceptions or deviations from the Contract Documents and reasons for them.   |

D. Resubmissions: Resubmittal shall follow the same procedures as the initial submittal with the following exceptions:

1. Transmittal shall contain the same information as the first transmittal except that transmittal numbers shall run consecutively and the submission number shall indicate 2<sup>nd</sup>, 3<sup>rd</sup>, etc. submission. The drawing number/description shall be identical to the initial submission and the date shall be the revised date for that submission.
2. Unless otherwise approved by the A, no new material shall be included on the same transmittal for a resubmission.

3. Where Resubmittal has not been required by the Architect, but corrections have been noted on a shop drawing, seven (7) prints of the drawings after the noted corrections have been made shall be submitted to the Architect for record purposes but not for action. Shop Drawings reviewed by the Designer’s Architects will have three prints returned.

**E. Submittal Procedures by General Contractor for Approval**

1. General: All submittals shall be made to Architect’s office.
2. Shop Drawings: Seven (7) black line prints (maximum sheet size shall be 30 x 42).

**F. Architect’s Review Procedures:**

1. The Architect’s review, including Architect’s review period will not exceed fourteen (14) calendar days from the established date of each submission indicated on the Schedule of Shop Drawings, Product Data, and Samples plus the additional time, if any, for distribution by the General Contractor and receipt of submissions by the Architect. The General Contractor is required to strictly adhere to the established Schedule dates.
2. The Architect will process the submission and indicate the appropriate action on the submission and the transmittal. Incomplete or erroneous transmittals will be returned without action.
3. The Architect will fill out transmittal in the following sequence:
  - a. Date Received Date arriving in the Architect’s office.
  - b. Date Return Date leaving the Architect’s office to the General Contractor.
  - c. To/Date Name of architect to whom submission is sent for review and date leaving the Architect’s office.
  - d. From/Date Name of architect reviewing submission and date arriving in the Architect’s office.
  - e. Action Indicate action taken on submission.
  - f. Distribution Number of copies distributed and type of material distributed (sepia, print, brochure or samples, etc.).

g. Architect's Remarks Note major deviations from the Contract Documents.

4. The Architect will return two (2) of Shop Drawings, one Sample or two brochures with copies of transmittal forms to the General Contractor.
5. The Architect will keep a copy and send one copy to the Owner.

#### 1.06 SUBMISSION OF PRODUCT DATA

- A. The Contractor shall submit seven (7) copies of Product Data to the Architect. All such data shall be specific and identification of material or equipment submitted shall be clearly marked in ink. Data of general nature will not be accepted.
- B. Product Data shall be accompanied by a transmittal notice. The Contractor's stamp of approval shall appear on the printed information itself, in a location which will not impair legibility.
- C. Product Data returned by the Designer as "Disapproved" shall be resubmitted in seven (7) days until the Architect's approval is obtained.
- D. When the Product Data are acceptable, the Architect will stamp them "Approved" or "Approved as Corrected", distribute copies to the team 3 copies, and return two (2) copies to the Contractor. The Contractor shall provide and distribute additional copies as may be required to complete the Work.
- E. The Contractor shall maintain one full set of approved, original, Product Data at the site.
- F. Provide product data for all items to be installed whether or not noted in the specification section.

#### 1.07 SUBMISSION OF SAMPLES

- A. Unless otherwise specified in the individual section, the Contractor shall submit three specimens of each sample.
- B. Samples shall be of adequate size to permit proper evaluation of materials. Where variations in color or in other characteristics are to be expected, samples shall show the maximum range of variation. Materials exceeding the variation of approved samples will not be approved on the Work.
- C. Samples of items of interior finishes shall be submitted all at once to permit a coordinated selection of colors and finishes.

- D. Samples which can be conveniently mailed shall be sent directly to the Designer, accompanied by a transmittal notice. All transmittals shall be stamped with the Contractor's approval stamp of the material submitted.
- E. All other samples shall be delivered at the field office of the Project Representative 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 to the Architect.
- F. If a sample is rejected by the Architect, a new sample shall be resubmitted in the manner specified hereinabove. This procedure shall be repeated until the sample is approved by the Architect.
- G. Samples will not be returned unless return is requested at the time of submission. The right is reserved to require submission of samples whether or not particular mention is made in the specifications, at no additional cost to DCAM.
- H. Samples shall not be installed as part of the work.
- I. Provide color and finish samples of every item to be installed.

#### 1.08 CONSTRUCTION SCHEDULE

- A. The Proposed Construction Schedule shall be based on an orderly progression of the work, allowing adequate time for each operation, and leading to a reasonable certainty of Substantial Completion by the date established in the Agreement. The Proposed Construction Schedule will be reviewed by the Owner/Architect for compliance with the requirements of this Article and will be accepted or returned to the Contractor for revision and resubmittal. Unless specifically required by law, no payment under this Contract shall be due until the Proposed Construction Schedule has been approved by the Owner/Architect.
- B. The Proposed Construction Schedule in **critical path method form** which shall include the following with such other details as Owner/Architect may require:
  - 1. Indicate complete sequence of construction by activity, with dates for beginning and completion of each element and stage of construction.
  - 2. Identify each item by major Specification Section number.
  - 3. Submittal and Approval Dates for all Shop Drawings and Samples.
  - 4. A chart showing Critical Delivery Dates for Material and Equipment to be incorporated into the Work.
  - 5. Provide sub-schedules to define critical portions of entire Schedule.

6. Coordinate content with Schedule of Values and provide the cost of each activity as identified in the Construction Schedule.
- C. During the progress of the Work, any changes in the original schedule desired by the General Contractor which affect Contract completion dates shall be approved by the Owner before being put into effect.
- D. When changes in the Work are required, the original Proposed Construction Schedule shall be revised without delay to incorporate such changes or new work and indicate the effect hereof on the Project as a whole.
- E. Provide updated critical path method (CPM) chart each month. Submit chart for review with Contractor's Application for Payment.

#### 1.09 SCHEDULE OF VALUES

- A. Prior to the first request for payment, the General Contractor shall submit to the Architect and Owner, a Schedule of Values of the various portions of the work in sufficient detail to reflect various major components of each trade, including quantities when requested, aggregating the total contract sum, and divided so as to facilitate payments for work under each Section in accordance with Article VII of the Contract Form. The Schedule shall be prepared in such form as specified or as the Architect or Owner may approve, and it shall include data to substantiate its accuracy. Each item in the Schedule of Values shall include its proper share of overhead and profit in this schedule, including breakdown of values, requires the approval of the Architect and Owner and shall be used only as a basis for the Contractor's request for payment.

#### 1.10 MANUFACTURER'S INSTRUCTIONS

- A. Submit manufacturer's printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for all products.

#### 1.11 CERTIFICATES OF COMPLIANCE

- A. Submit certificates of compliance together with the associated Shop Drawings, Product Data and Samples required for the Product.
- B. Submit on 8-1/2 in. x 11 in. white paper.
- C. Submit one copy.
- D. The Architect will retain the certificates of compliance; no approval reply is intended.

#### 1.12 PATTERNS AND COLORS

- A. Submit accurate color charts and pattern charts to the Architect for his/her 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. Submit actual cured samples of all materials for color approval.

#### 1.13 RECORD DRAWINGS

- A. At the completion of the project, the Contractor shall prepare a complete set of reproducible record drawings and AutoCAD Files, latest version on compact discs showing all systems as actually installed.

#### 1.14 SUBMITTAL TRANSMITTAL FORM

- A. All submittals shall be presented with the submittal transmittal form attached, completely filled out. Submittals without the attached form will be returned without review.

END OF SECTION



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**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 35 13**

**SPECIAL PROJECT PROCEDURES**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 BIDDERS EXAMINATION AND INSPECTION OF EXISTING BUILDING AND SITE

- A. All bidders must inspect the existing site and make their own assessment of the work required to achieve the complete, finished conditions specified in the Contract Documents.
- B. Failure to adequately inspect the site and/or correctly assess existing conditions shall not be cause for additional payment.
- C. Every contractor will be bound by the scope of work of the Contract Documents and shall make the inspections necessary to assure that the bid price includes the complete scope.

1.03 HOURS OF WORK

- A. Work may commence at 7:00 A.M. and continue until 5:00 P.M., Monday through Friday.

- B. The contractor shall be completely and fully responsible for the security and safety of the job site at all times.

#### 1.04 CONTRACTOR USE OF THE BUILDINGS, ACCESSIBILITY AND SCHEDULES FOR WORK

- A. The work of the Contractor and all Subcontractors shall be performed during the hours of operation as specified herein and in and around areas of the building and site used while occupied by the Owner and the public. The Contractor shall execute the Work with the least possible disturbance to the use and continuous functioning of the site and building. The Contractor and each Subcontractor take all necessary measures to assure the safety of the staff, visitors, and the general public. The General Contractor is solely responsible for safety on the job site including securing and making safe all construction areas during construction hours as well as during non-construction hours.
- B. Schedule of Work and Site Use
  1. The Contractor shall schedule the work of this Contract so as to perform and complete the Work of the Contract according to the following schedule. The Contractor shall within seven (7) days of the Notice of Contract Award, submit a schedule to the Owner and Architect for review.
  2. Between the time period of the general bid due date and Construction Commencement, the Contractor shall take all necessary measures to complete the Work of this Contract. It is expected that the Contractor utilize the time period between the bid date and construction start date to schedule and coordinate the work and work sequence, prepare shop drawings and submittals for approval and order materials. The Owner shall issue a Notice to Proceed. If the work is not complete by the completion date, the Contractor will be subject to liquidated damages.
  3. The Contractor shall be responsible for providing any and all measures and/or temporary construction required to control the transmission of dust, particles, and fumes from construction activities.
  4. The Contractor shall be responsible on a daily basis for informing the designated Owner's representative of all persons on-site that day associated with the Work. The Contractor shall establish a daily reporting system of all activities which is acceptable to the Owner.
  5. The Construction schedule shall indicate the dates for start and completion of each work item or task required with all milestones using a Bar Chart subject to approval by the Architect.

6. The Awarding Authority's review of the project construction schedule shall not extend to the accuracy or other matters dealt with in the schedule, including but not limited to whether work is omitted, whether duration of activity is reasonable, the level of labor, materials or equipment, the Contractor's means, methods, techniques, procedures or sequence of construction, or whether the sequence and timing for work remaining are practical. The accuracy, correctness of all work, sequencing, and schedules shall remain the sole responsibility of the Contractor. Neither the Awarding Authority's review of a schedule nor a statement of resubmittal not required shall relieve the Contractor for the responsibility for complying with the contract schedule, adhering to sequences of work, or from completing any omitted work with the Contract Time.
7. The Contractor shall provide, erect and maintain barricades with any required egress, access doors, lighting, ventilation, guard rails and all other appurtenances required to protect the general public, visitors, staff, and workers while construction is in progress. Safety is the sole responsibility of the Contractor on the job site.

#### 1.05 HOUSEKEEPING AND PROTECTION OF EXISTING CONDITIONS

- A. Maintain the premises in a safe, orderly condition at all times. Protect construction, furnishings, equipment and other items.
- B. Property Protection: The General Contractor shall take all measures necessary to protect the Owner's property.
- C. Security: The General Contractor shall take every possible precaution to maintain the security of the buildings and site. The Contractor shall cooperate with the Owner fully and follow the Owner's directions as issued. The Contractor shall control and restrict access to areas of work to prevent injury to persons and property.
- D. The Contractor shall properly cover, protect and maintain floor and finished surfaces to prevent damage. Replace protective coverings which become wet, torn or ineffective.
- E. Correction by the Contractor
  1. At no additional cost to the Owner, the General Contractor shall immediately correct all deficiencies, including damages to the building, site and site surfaces, damages to furnishings, damages to equipment or systems, damage to adjacent properties, and all other damage caused by the General Contractor or its Subcontractors during the execution of the Work of this Contract. Any and all damages resulting from inadequate, insufficient or defective temporary protections installed by the Contractor

during the work of this Contract, shall be corrected by the General Contractor at no additional cost to the Owner.

#### 1.06 DUST, DIRT, AND FUME CONTROL

- A. The Contractor shall take all necessary precautions and provide all necessary temporary construction to effectively contain dust, dirt and fumes within the areas of work and within the work limits. Temporary construction shall be provided to effectively prevent dust and dirt from entering areas of the buildings or adjacent buildings, satisfying all City, State and Federal laws, codes, and requirements.

#### 1.08 RUBBISH REMOVAL

- A. The Contractor shall remove all rubbish, waste, tools, equipment and appurtenances caused by and used in the execution of the Work; but this shall in no way be construed to relieve the Contractor of his primary responsibility for maintaining the building and Project site clean and free of debris, leaving all work in a clean condition and satisfactory to the Official.
- B. Immediately after unpacking, the Contractor shall collect and remove from the building and Project site all packing materials, case lumber, excelsior, wrapping and other rubbish.
- C. Rubbish removal shall occur so that trash and debris are contained in closed and secured waste containers.

#### 1.12 BROKEN GLASS

- A. The Contractor shall be held responsible at all times prior to Substantial Completion of the Work for all broken or scratched glass, or glass which had been damaged as a result of the Work, or otherwise. And, when so directed by the Official, the Contractor shall replace at no increase in Contract Price or Contract Time, all such glass broken, missing, or damaged prior to Substantial Completion.

#### 1.13 CLEANING AND POLISHING

- A. The Contractor shall at all times keep the building and Project site free from accumulation of waste materials or rubbish.
- B. Immediately prior to final inspection, the entire building and surrounding Project areas shall be thoroughly cleaned by the Contractor including, without limitation:
  - 1. All construction facilities, tools, equipment, surplus materials, debris and rubbish shall be removed from the Project site and the entire Work shall be left broom clean.

2. All finished surfaces shall be left in perfect condition, free of stains, spots, marks, dirt, and other defects. The Contractor shall be responsible for the cleaning and polishing of the Work of all trades, whether or not cleaning by such trades is included in their respective Selection of the Specifications.
  3. New glass shall be washed and polished on both sides.
- C. In cleaning items having manufacturer's finish, or items previously finished by a Subcontractor, care shall be taken not to damage such finish. In cleaning glass and finish surfaces, care shall be taken not to use cleaning agents which may stain or damage any finish materials. Any damage to finishes caused by cleaning operations shall be corrected and repaired by the Contractor at no increase in Contract Price.

#### 1.14 OR-EQUAL

- A. Where materials, equipment, apparatus, or other products are specified by Manufacturer, brand name, type or catalog number, such designation is to establish standards or performance, quality, type and style.
- B. If the General or Subcontractor wishes to use materials or equipment other than these specifically designated herein, as being equal to those so specifically designated, he shall submit the proposed substitution before purchasing and/or fabrication in accordance with the requirement of the General Conditions for approval.
- C. It is the responsibility of the Contractor to submit all back-up material and data needed to prove that the proposed product is an "or-equal". The Architect will not review an alternative product without proper documentation. Alternative products and assemblies will be rejected immediately without proper documentation.
- D. The schedule of the project is not subject to the availability of products submitted as "or approved equal" or the review needed to certify an "or approved equal" product.

#### 1.15 PERMITS AND POLICE DETAILS

- A. The contractor is responsible for procuring and paying for all applicable permits and police details throughout the entire project.

#### 1.16 COORDINATION

- A. The Contractor shall coordinate locations of all items to be installed with the Architect. If an item is not dimensioned, for height or location, contact the

Architect for the installation information. Installation of items without the proper dimensional information may result in reinstallation at no additional charge by the contractor.

#### 1.17 GENERAL NOTES

- A. Contractor shall be responsible for checking and coordinating all dimensions with architectural drawings. In case of conflict, the architect shall be notified and shall resolve the conflict.
- B. In any case of conflict between the drawings and the project specifications, the more stringent requirements shall govern.
- C. The contractor shall make no deviation from design drawings without prior review by the architect.
- D. Work not indicated on a part of the drawings but reasonably implied to be similar to that shown at corresponding places shall be repeated.
- E. All work shall comply with applicable codes and local laws and regulations.
- F. The structural design of the building is based on the full interaction of all its component parts. No provisions have been made for conditions occurring during construction. It is the sole responsibility of the contractor to make proper and adequate provisions for stability of, and all stresses to the structure due to any cause during construction.
- H. Contractor shall not scale drawings. Contractor shall request all dimensions or information required to perform the work from the architect. Work completed by the contractor without dimensions or information shall be done at their own risk and, if deemed incorrect by the architect, shall be removed and reinstalled to the specifications of the architect at no additional cost to the owner.
- I. Codes: the project is based on the requirements of the Massachusetts State Building Code - Ninth Edition.
- J. The plans were compiled from various sources. The contractor is responsible for verifying all existing conditions and dimensions.

#### 1.18 INSURANCE

- A. The Contractor shall purchase and maintain, at his expense all insurance required by the Contract. Documents and all insurance required by the applicable laws of Massachusetts, including but not limited to, General Laws, Chapter 146, in connection with all hoisting equipment.

B. The Contractor shall purchase and maintain such insurance as will protect him from claims under workmen's compensation acts and from claims for damages because of bodily injury, including death and all property damage including, without limitation, damage to buildings and adjoining the site of construction which might arise from and during operations under this contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them including:

1. Statutory Worker's Compensation and Employer's Liability

The contractor shall provide insurance for the payment of compensation and the furnishing of other benefits under Chapter 152 of the General Laws (so-called Worker's Compensation Act) to all persons to be employed under this contract and shall continue in force such insurance as aforesaid shall be deemed a material breach of this Contract and shall operate as an immediate termination thereof. The contractor shall, without limiting the generality of the foregoing, conform to the provisions of Section 34A of Chapter 149 of the General Laws, which Section is incorporated herein by reference and made a part of hereof.

2. Comprehensive General Liability Insurance

Minimum bodily injury limits of \$ 500,000 per person and \$ 1,000,000 per accident, and property damage limits of \$ 500,000 per accident and \$ 1,000,000 aggregate during any 12 month period, shall include the following:

- a. Public liability (bodily injury and property damage)
- b. X.C.U. (explosion, collapse, and underground utilities)
- c. Independent contractor's protective liability.
- d. Products and completed operations.
- e. Save harmless agreement for Owner and Architects set forth in ARTICLE 10.11 of the GENERAL CONDITIONS.

3. Comprehensive All Risk Motor Vehicle Liability Insurance

Minimum bodily injury limits of \$ 500,000 per person, \$ 1,000,000 per accident, and property damage limit of \$ 1,000,000 per accident.

4. All Risk Insurance

Covering all Contractor's equipment with a provision for Waiver of Subrogation against the Owner.



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CBI Consulting, LLC  
Boston, Massachusetts  
Tel: (617) 268-8977  
Fax: (617) 464-2971

5. Excess Liability Insurance in Umbrella Form with combined Bodily Injury and Property Damage Limit of \$ 1,000,000.
6. The Town of Arlington and CBI Consulting LLC shall be listed as Additional Insured with a Waiver of Subrogation on the insurance policy for this project.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 40 00**

**CONDUCT OF THE WORK**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 PROJECT MANAGEMENT

- A. The Contractor's attention is directed to the General Conditions.
- B. The Building will be occupied during construction. The Contractor will have complete control of the job site and is solely responsible for safety and security on the job site. The Contractor shall take all necessary precautions to ensure the public safety and convenience of the visitors during construction.
- C. The work must be completed in a continuous uninterrupted operation. The Contractor must use sufficient personnel and adequate equipment to complete all the necessary work requirements within a minimum period of time.
- D. Unless specifically authorized by the Owner, in writing, the work must be conducted between the hours of 7:00 a.m. and 5:00 p.m. on Monday through Friday. No work is to be done on Saturdays, Sundays or Holidays unless approved by the Owner in advance.
- E. The Contractor is responsible for the security and stability of partially completed work until the project is accepted by the Owner.

**CONDUCT OF WORK**

### 1.03 SHUTDOWN OF SERVICES

- A. If site utility services to the neighborhood are cut by the contractor, he shall supply all labor, materials or whatever may be required to supply said temporary utility services at no extra cost to the neighborhood and in accordance with the state and local regulations on health and safety, working around the clock, until they are reinstated. The contractor shall also repair the damaged utility immediately at no cost to the owner.

### 1.04 COORDINATION

- A. The Contractor shall submit for approval to the Owner a detailed operational plan showing the sequence of operations prior to commencement of any work at the site. Any changes to this operational plan must be approved by the Owner.
- B. The Contractor must retain on the Work during its progress a competent full time representative, satisfactory to the Owner. This representative shall not be changed, except with the consent of the Owner. The representative shall be in full charge of the work and all instructions given to this person by the Architect shall be binding.
- C. The Contractor must supply to the Owner the home telephone number of a responsible person who may be contacted during non-work-hours for emergencies on the Project.

### 1.05 OWNER'S COOPERATION

- A. The Owner shall assist the Contractor to perform the Work in accordance with the approved operational plan.
- B. The Contractor shall provide:
  - 1. Notification to the Owner two (2) weeks before any work is scheduled at the site/building.
  - 2. Notification to the Owner in writing forty-eight (48) hours before work is scheduled in any particular area.
  - 3. An updated schedule monthly with the application for payment. Payments will not be authorized until the updated schedule is received and approved.

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 42 00**

**DEFINITIONS & STANDARDS**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 DELIVERY AND STORAGE

- A. Materials shall be delivered dry, in their original, unopened containers, clearly labeled with manufacturer's name, brand name, and such identifying numbers as are appropriate. Materials shall be stored as required by the Manufacturer's specifications.
  - 1. All materials shall be stored flat, or in the case of rolls, standing on end, elevated from the ground or deck, and protected with approved waterproof covers to keep the materials dry and protected from sunlight and moisture, and ventilated to prevent excessive temperature.
  - 2. Flammable materials shall be stored in a cool, dry area away from sparks and open flames.
  - 3. Damaged or deteriorated materials shall not be used and shall be removed from the job site.
  - 4. All cardboard containers shall be stored in dry areas or on pallets. Packing materials shall be collected so as not to blow around the site.

**DEFINITIONS & STANDARDS**

5. All materials shall be stored in temperatures specified by the manufacturer. Submit proposed storage arrangements regarding temperature to the Architect and the materials manufacturer for review.
6. All firestopping shall be performed by each respective trade. All File Sub-Bidders shall firestop their own work.

#### 1.03 JOB CONDITIONS

- A. Do not deliver to site or install any material or system that has not been approved. Materials installed without approval may be required to be removed and replaced at no additional cost to the owner.
- B. Materials which have a temperature other than the application temperature of the manufacturer shall not be applied.
- C. All materials shall be installed according to manufacturer's specifications and shall be compatible with the existing materials used on site.
- D. Remove only as much existing roofing as can be replaced and made weathertight each day, including all flashing work.
- E. All surfaces to receive the new materials shall be thoroughly dry. Should surface moisture such as dew exist, the Contractor shall provide the necessary equipment to dry the surface prior to application.

#### 1.04 CONDITIONS, DIMENSIONS AND QUANTITIES

- A. All conditions, dimensions and quantities shall be determined or verified by the Contractor. The Plans and details have been compiled from various sources and may not reflect the actual condition at the moment of construction. The Contractor is cautioned to take all precautions and make all investigations necessary to install the proposed work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

#### 1.05 DEFINITION OF "CONSULTANT"

- A. Any reference to "Designer", "Engineer" or "Architect" in this Project Manual, Specification or on the drawings shall refer to CBI Consulting LLC., 250 Dorchester Avenue., Boston, Massachusetts 02127, (617) 268-8977, Arno Skalski, Project Manager.

#### 1.06 DEFINITION OF "OWNER"

- A. Any reference to the Owner shall be the Town of Arlington.

ROBBINS LIBRARY EXTERIOR ENVELOPE REPAIRS -PHASE 1A  
BID NO. 19-58  
ARLINGTON, MASSACHUSETTS  
CBI JOB NO.: 17152- A

CBI Consulting, LLC  
Boston, Massachusetts  
Tel: (617) 268-8977  
Fax: (617) 464-2971

#### 1.07 MINIMUM REQUIREMENTS

- A. It is the intent of these contract documents to, in some cases, exceed the minimum requirements of the manufacturer. The new work shall be bid and installed as detailed.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 45 00**

**QUALITY CONTROL**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 PULL-OUT TESTS

- A. The Contractor shall perform pull-out tests to determine the length and type of fastener required to provide adequate withdrawal resistance from every substrate.
- B. A minimum of two pull out tests shall be performed per section to be fastened. More tests shall be performed if required by the structural engineer or the material manufacturer.
- C. Submit a report from the fastener supplier and the product manufacturer describing the pull out tests, the recommend fasteners, and that they are covered under the warranty.

1.03 INSPECTION AND TESTING

- A. An independent inspector and/or testing laboratory may be engaged and paid for by the Owner to perform the inspection and testing of the new work.

- B. The Contractor shall cooperate with the inspector and/or testing laboratory, furnish materials and labor as may be required and provide for convenient access to all parts of the work for purposes of inspection and testing.
- C. The Contractor shall accept as final the results of all such inspection and testing.
- D. The inspector shall have the authority to delay the commencement of work, or to stop the work at any time, for any reason which he deems necessary.
- E. The inspector and/or testing laboratory reserves the right to require the Contractor to perform removal of materials installed by the Contractor. Make all cuts in accordance with the recognized standard practices. Remove materials only in the presence of the inspector.
  - 1. Immediately after removing each material sample identify each by number and exact location by gummed label attached to a smooth surface of the cut sample.
  - 2. Submit the cut samples directly to the inspector after applying identification.
  - 3. Replace the cut with new materials, matching those removed, immediately after each removal, and insure that the replacement is completely watertight.
- F. The removal cuts shall be subjected to various tests, including moisture content, density, thickness, compressive strength, composition, conformance with ASTM specifications where applicable, conformance with the recommendations of the manufacturers whose materials were used.
- G. Bear all costs for tests where materials or systems have been found unacceptable and all costs for replacement required due to such unacceptability.
- H. If any replacement work is required, such work will also be subject to the terms of this SPECIFICATION.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION



**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 50 00 TEMPORARY CONSTRUCTION FACILITIES & CONTROLS**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 GENERAL

- A. The Contractor shall be responsible for providing and maintaining all temporary facilities until Substantial Completion. Removal of such prior to Substantial Completion must be with the concurrence of the Architect. The Contractor bears full responsibility for reproviding any facility removed prior to Substantial Completion
- B. Removal of all temporary facilities shall be a condition precedent to Substantial Completion unless directed otherwise by the Architect or specifically noted in the specifications.
- C. The Contractor must comply with all safety laws and regulations of the Commonwealth of Massachusetts, the United States Government, and local government agencies applicable to Work under this contract. The Contractor's attention is directed to the Commonwealth of Massachusetts, Department of Labor and Industries Regulation 454 CMR.
- D. Safety is the sole responsibility of the contractor on the job site. Contractor is notified that the building will be occupied during construction. The Architect does

**TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS**

not have control of the job site in any way.

#### 1.03 TEMPORARY TOILETS

- A. Portable, temporary toilets shall be provided by the contractor and shall be located as directed by the owner.
- B. The Contractor:
  - 1. Assumes full responsibility for the use of the temporary toilets
  - 2. Pays all costs for operation, maintenance and cleaning.
- C. Under no circumstances will the Contractor's personnel be allowed to use the newly installed toilets and sinks in the building.
- D. The Contractor shall not have use of sanitary toilet facilities within the building and must provide portable sanitary toilets for the use of their forces for the entire duration of the work. Toilets shall be cleaned and emptied twice weekly (minimum) and as directed by the Owner.

#### 1.04 TEMPORARY CONSTRUCTION FENCE

- A. The Contractor shall be responsible for providing and maintaining temporary fencing and barricades around the construction as may be necessary to assure the safety of all persons authorized or unauthorized. Such protective measures shall also be located and constructed as required by local, state, and federal ordinances, laws, codes, or regulations.

#### 1.05 TEMPORARY STRUCTURES AND MATERIAL HANDLING

- A. The Contractor shall provide such secure storage sheds, temporary buildings, or trailers as required for the performance of the Contract.
- B. Materials shall be handled, stored, installed, cleaned, and protected in accordance with the best practice in the industry and, except where otherwise specified in the Contract Documents, in accordance with manufacturer's specifications and directions.
- C. The Contractor must obtain the permission of the Owner for the placement of any storage facilities on site, and the Owner assumes no responsibility for articles stored.

#### 1.06 TEMPORARY STAGING, STAIRS, CHUTES

- A. Except as otherwise specified, the Contractor shall furnish, install, maintain in safe condition, and remove all scaffolds, staging, and planking over 8 ft. in height,

### **TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS**

required for the use of all trades for proper execution of the Work, except as noted.

- B. The Contractor shall furnish, install, maintain in safe condition, and remove all temporary ramps, stairs, ladders, and similar items as required for the use of all trades for the proper execution of the Work.
- C. If the project is new construction permanent stairs shall be erected as soon as possible, for which the Contractor shall provide temporary protective treads, risers, handrails, and shaft protection.
- D. The Contractor shall furnish, install, maintain, and remove covered chutes from the work area. Such shall be in convenient locations and permit disposal of rubbish directly into trucks or disposal units.
- E. Debris shall not be allowed to fall freely from upper levels of the building. Materials shall not be thrown or dropped from open windows or the roof.
- G. Each File Sub-Bidder is responsible for erecting and maintaining, in safe condition, all scaffolding or staging required on the job, as well as all hoisting, to perform all the work of their respective trade, and for use by the Architect who will need to review the work or mark or verify quantities on the project. The General Bidder is responsible for erecting and maintaining, in safe condition, all scaffolding or staging required on the job, as well as all hoisting, to perform all the work in their scope and for use by the Architect who will need to review the work or mark or verify quantities on the project.

#### 1.07 HOISTING FACILITIES

- A. Except as otherwise specified, the Contractor shall provide, operate, and remove material hoists, cranes, and other hoisting as required for the performance of the Work by all trades. All such hoisting service shall be without cost to the Subcontractors and Sub-Bidders.

#### 1.08 UTILITIES

- A. The contractor will be able to use without charge, electrical power and water. It is the responsibility of the Contractor to make provisions to extend the utility from the nearest service outlet designated by the Owner to the point of use. Any misuse will be cause for discontinuance of the utility whereupon the Contractor shall provide the service at his/her own expense. Electrical energy shall not be used for temporary heating purposes. Do not include any cost for use of electric power or water that may be supplied by the Owner in the Basic Construction Proposal. All work shall comply with all applicable codes as well as OSHA requirements.

#### 1.09 TEMPORARY WATER

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

#### 1.10 TEMPORARY ELECTRICITY

- A. The Contractor may make use of the electricity available at the site, metered and paid for by the Owner, provided that the Contractor shall supply proper adapters and extension cords.
  - 1. Where heavy duty electric equipment drawing current in excess of 15 amperes is involved, the Contractor shall provide temporary service to supply the power.
  - 2. The temporary electric service shall include, but not be limited to labor, materials, and equipment necessary to supply temporary power of adequate capacity for the project.
  - 3. Transformers and meters, when required by the power company, will be furnished by the power company and the contractor shall pay the costs thereof.
- B. Temporary electrical Work shall be performed under the direct supervision of at least one master electrician, who will be present on the project at all times when such work is being performed.
- C. The Contractor shall furnish, install, and maintain lamps in operating condition. The Contractor, and each Subcontractor, shall furnish their own extension cords and additional lamps as may be required for their work. Temporary work of a special nature, not otherwise specified hereunder, shall be provided, maintained, and paid for the trade requiring same.
- D. All lamps installed in permanent lighting fixtures and used as temporary lights during the construction period shall be removed and replaced shortly before Substantial Completion by the set of lamps required to be provided under the Electrical section of the specifications.
- E. All temporary work shall be provided in conformity with the National Electric

### **TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS**

Code, State laws, and requirements of the power company. Particular attention is called to Commonwealth of Massachusetts, Department of Labor and Industries Regulation, 454 CMR.

#### 1.11 WEATHER PROTECTION

- A. The Contractor shall provide temporary enclosures and heat to permit work to be carried on during the months of November through March in compliance with MGL c.149 §44G (d). Without limitation this includes such items as excavation, pile driving, steel erection, erection of certain exterior wall panels, masonry, sealants, waterproofing, sheet metal work, roofing, and similar operations.
- B. "Weather Protection" means the temporary protection of that Work adversely affected by moisture, wind, and cold by covering, enclosing, and/or heating. This protection shall provide adequate working areas during the months of November through March as determined by the Owner and consistent with the construction schedule to permit the continuous progress of all Work necessary to maintain an orderly and efficient sequence of construction operations. The Contractor shall furnish and install "Weather Protection" material and be responsible for all costs, including heating required to maintain a minimum of 40 degrees F. at the working surface. This provision does not supersede any specific requirements for methods of construction, curing of materials, or the applicable conditions set forth in the Contract Documents with added regard to performance obligations of the Contractor.
- C. Within 30 calendar days after award of the Contract, the Contractor shall submit in writing, to the Architect for approval, three (3) copies of the proposed methods for "Weather Protection".
- D. The Contractor shall assume the entire responsibility for weather protection during construction (until Substantial Completion), and shall be liable for any damage to any Work caused by failure to supply proper weather protection and proper ventilation.
- E. Work damaged by frost shall be removed and replaced by and at the Contractor's expense and as directed by the Architect.
- F. It is to be specifically understood that the Contractor shall do no work under any conditions deemed unsuitable by the Contractor to the execution of the Work. This provision shall not constitute any waiver, release, or lessening of the Contractor's obligation to bring the Work to Substantial Completion within the period of time set forth in the Contract Documents.

#### 1.12 PROTECTION

- A. Weather protection shall be provided for; weather conditions occurring or

### **TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS**

anticipated, the extent of the existing structure exposed, or any other possible hazard. Remove only as much roofing and sealant as can be completely replaced and made watertight in one day.

- B. Dust control, pedestrian protection, and traffic control measures shall be provided during the course of the work.
- C. Schedule and execute all work without exposing the sensitive building areas to the affects of inclement weather. Protect the existing structure and its contents against all risks, and repair or replace all damage to the Owner's satisfaction. Protect all exterior building surfaces, roofing, lighting, landscape areas, and pavement from damage.
- D. All new and temporary construction, including equipment and accessories, shall be secured from wind damage or blow-off.
- E. The Contractor shall provide all necessary temporary protection and barriers to segregate the work area and to prevent damage to adjacent areas. Also provide plywood protection for roofing adjacent to construction. Areas damaged because of inadequate protection will be repaired at no additional cost to the owner, as per these specifications and the recommendations of the Architect.
- F. Provide temporary barricades and other forms of protection as required to protect Owner's personnel, students, and general public from injury due to the work.
- G. Any deteriorated substrate which is discovered shall be promptly reported to the Architect.
- H. Safety on the job site is the sole responsibility of the contractor. The Contractor shall ensure that all Local, State, Federal, OSHA or other applicable safety requirements are strictly accorded to. All OSHA safety requirements regarding items such as scaffolding, temporary protections, lift trucks, cranes, removal of debris, dust control, cleaning solvents, and high pressure water washing, sandblasting and equipment shall be ensured by the Contractor.

#### 1.13 DEBRIS

- A. The Contractor will be responsible for the removal of all construction debris from the job site.
- B. Upon completion of each day and each phase of the work the Contractor shall leave the premises free of all debris and waste, in broom-clean condition. Overnight storage of material on site will be as approved by the Owner. The Contractor shall be responsible for keeping the site free of rubbish and debris, and in a neat and orderly condition at all times. The Contractor shall clean up and remove all accumulated rubbish and debris daily.

### TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS

- C. The Owner's representative shall inspect the site daily. If it is determined that the site has not been cleaned of construction debris on a particular day the Contractor may be assessed \$100.00 for that day to be used to have the site cleaned by in house personnel. This shall be prepared by the Architect as a deduct change order to the contract.
- D. Debris resulting from the new work shall be placed in covered containers provided by the Contractor and legally disposed of. Burning will not be permitted on site. Dumpster locations shall be approved by the Owner.

#### 1.14 TEMPORARY NOISE AND POLLUTION CONTROL

- A. All work performed under the Contract shall conform to the requirements of Chapter 111, Sections 31C and 142D of the General Laws, Commonwealth of Massachusetts, Department of Public Health, and Metropolitan Boston Air Pollution Control District regulations.

#### 1.15 CONSTRUCTION PARKING CONTROL

- A. The Contractor shall control trucks and worker's vehicles to prevent unnecessary congestion in the neighborhood of the project. See Site Plan for allowable on site parking area.
- B. The schedule and location of all deliveries of materials must be coordinated and approved by the Owner.
- C. There is sufficient parking on site for the contractor's vehicles. All parking will be at the direction of the Owner.

#### 1.16 TEMPORARY SITE STORAGE

- A. The Owner shall designate an area for temporary site storage on the site. All materials shall be stored in locked storage trailers or container boxes.
- B. Storage of materials will not be permitted within the building scope of work area.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

**TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS**

**01 50 00 - 7**

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 51 00**

**PROTECTION**

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 PROTECTION OF PERSONS & PROPERTIES

- A. The site will not be occupied during construction. The contractor shall have complete control of the job site. The Contractor shall take all necessary precautions to ensure the public safety and convenience of visitors during construction. Safety is the sole responsibility of the contractor, regardless of what is set forth in this document. The architect does not have control of the job site, or means and methods, in any way.
- B. Any damage to buildings, roads, (public and private), concrete walks, bituminous concrete areas, fences, rails, lawn areas, trees, shrubbery, poles, underground utilities, etc. shall be made good by and at the Contractor's own expense, all to the satisfaction of the Owner.
- C. The Contractor shall patch, repair and/or replace all adjacent materials and surfaces damaged after the installation of new work to the complete satisfaction and at no expense to the Owner. All repair and replacement work shall match the existing in kind and appearance.



### 1.03 TEMPORARY PROTECTION

- A. The Contractor shall:
1. Protect excavations, trenches, buildings, and materials at all times from rain water, ground water, backing-up, or leakage of sewers, drains, or other piping, or from water damage of any origin. Provide all pumps, piping, coverings, and other materials and equipment as required by job conditions to accomplish this requirement.
  2. In addition to the weather protection during the months of November to March specified elsewhere, provide temporary watertight enclosures for openings in exterior walls and in roof decks when and as required to protect the Work from damage by inclement weather. Temporary enclosures shall be provided with adequate means of ventilation to prevent accumulation of moisture in the buildings.
  3. Provide temporary wood doors for exterior entrances and elsewhere when required. Permanent door enclosures shall not be used as temporary enclosures.
  4. Protect sills, jambs, and heads of openings through which materials are handled.
  5. Protect decks and slabs to receive work by other trades from any soiling which will prevent proper adhesion of subsequent Work. Decks and slabs shall be left clean and free of blemishes at the time other trades begin the application of their work.
  6. Protect concrete slabs to remain exposed and finished floors against mechanical damage, plaster droppings, oil, grease, paint, or other material which will stain the floor finish. Install and maintain adequate strips of building paper or other protection on finished floors in rooms where future Work will be done by other trades.
  7. Protect all surfaces to receive work by other trades from any soiling which will prevent proper execution of subsequent work
  8. Protect other areas, furniture, and private property of the resident and the Owner. Any areas damaged by the Contractor shall be restored to the original condition or compensated at the Contractor's expense.
- B. Roof surfaces and waterproofed surfaces shall not be subjected to traffic nor shall they be used for storage of materials. Where some activity must take place in order to carry out the Work, adequate protection must be provided.

- C. After the installation of the Work by any Subcontractor is completed, the Contractor shall be responsible for its protection and for repairing, replacing, or cleaning any such Work which has been damaged by other trades or by any other cause, so that all Work is in first class condition at the time of Substantial Completion.

#### 1.04 ACCESS

- A. The Contractor shall, at all times, leave an unobstructed way along walks and roadways, and shall maintain barriers and lights for the protection of all persons and property in all locations where materials are stored or work is in progress.

#### 1.05 SECURITY

- A. The Contractor shall be responsible for providing all security precautions necessary to protect the Contractor's and Owner's interests.
- B. Where excavation is involved, the Contractor shall be responsible for providing continuous watchmen service as necessary, to insure adequate protection of the general public.

#### 1.06 NOISE AND DUST CONTROL

- A. The Contractor shall take special measures to protect the residents, neighbors, and general public from noise, dust, and other disturbances by:
  - 1. Keeping common pedestrian and vehicular circulation areas clean and unobstructed;
  - 2. Insulating work area from occupied portions as far as possible; and
  - 3. Sealing dust and fumes from contaminating occupied spaces.

#### 1.07 FIRE PROTECTION

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

1.08 WIND PROTECTION

- A. Should high wind warnings be issued by the U.S. Weather Bureau, the Contractor shall take every precaution to minimize danger to persons, to the Work, and to the adjacent property.

1.09 WEATHER PROTECTION

- A. The Contractor shall provide Weather Protection as required by Specification Section 01500 Temporary Facilities and any other specific requirements of the Contract Documents.

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 52 00**

**CLEANING**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.
- E. This section supplements the General Conditions.
- F. Consult the individual sections of the specifications for cleaning of Work installed under those sections.

1.02 CLEANING DURING CONSTRUCTION

- A. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
  - 1. Do not burn or bury rubbish and waste materials on the site.
  - 2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
  - 3. Do not dispose of wastes into streams or waterways.
- B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.

- C. Do not allow materials and rubbish to drop free or be thrown from upper floors, but remove by use of a material hoist or rubbish chutes.
- D. Maintain the Site free from accumulations of waste, debris, and rubbish.
- E. Provide on-site containers for collection of waste materials and rubbish.
- F. At the end of each day, remove and legally dispose waste materials and rubbish from site.
- G. Disposal of materials shall be in compliance with all applicable laws, ordinances, codes, and by-laws.

### 1.03 FINAL CLEANING

- A. Prior to submitting a request to the Architect to certify Substantial Completion of the Work, the Contractor shall inspect all interior and exterior spaces and verify that all waste materials, rubbish, tools, equipment, machinery, and surplus materials have been removed, and that all sight-exposed surfaces are clean. Leave the Project clean and ready for occupancy.
- B. Unless otherwise specified under other sections of the Specifications, the Contractor shall perform final cleaning operations as herein specified prior to final inspection.
- C. Cleaning shall include all surfaces, interior and exterior, which the Contractor has had access to, whether new or existing.
- D. Employ experienced workmen or professional cleaners for final cleaning.
- E. Use only cleaning materials recommended by the manufacturer of the surface to be cleaned.
- F. Use cleaning materials which will not create a hazard to health or property and which will not damage surfaces.
- G. All broken or defective glass caused by the Contractor's Work shall be replaced at the expense of the Contractor.
- H. Remove grease, mastic, adhesive, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior surfaces. This includes cleaning of the Work of all finishing trades where needed, whether or not cleaning by such trades is included in their respective specifications.
- I. Clean and polish all new and existing glass and plastic glazing (if any) throughout

the building(s), on both sides. Clean plastic glazing in accordance with the manufacturer's directions. This cleaning shall be completed by qualified window cleaners at the expense of the Contractor just prior to acceptance of the Work.

- J. Wash and polish all mirrors.
- K. Repair, patch, and touch up marred surfaces to the specified finish, to match adjacent surfaces.
- L. Polish glossy surfaces to a clear shine.
- M. Do the final cleaning of resilient floors and wood floors as specified under the respective sections of the Specifications.
- N. Leave all architectural metals, hardware, and fixtures in undamaged, polished conditions.
- O. Leave pipe and duct spaces, plenums, furred spaces and the like clean of debris and decayable materials.
- P. In cleaning items with manufacturer's finish or items previously finished by a Subcontractor, care shall be taken not to damage such manufacturer's or Subcontractor's finish. In cleaning glass and finish surfaces, care shall be taken not to use detergents or other cleaning agents which may stain adjoining finish surfaces. Any damage to finishes caused by cleaning operations shall be repaired at the Contractor's expense.
- Q. Broom clean exposed concrete surfaces and paved surfaces. Rake clean other surfaces of grounds.
- R. Ventilating systems - Replace filters and clean ducts, blowers, and coils if units were operated during construction.
- S. Owner's responsibility for cleaning commences at Substantial Completion.

END OF SECTION

**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 70 00**

**PROJECT CLOSEOUT**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished be complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 COMPLETION OF WORK

- A. The site shall be cleaned of all debris resulting from the work and areas damaged during the course of the work restored to the satisfaction of the architect and the Owner.
- B. The Contractor shall notify the Architect and Owner that the work is completed and Project Manual requirements have been met. The Architect shall review the completed work with the Contractor within seven (7) calendar days of notification. Any deficiencies observed at the time will be conveyed directly to the Contractor with a written confirmation, after which the Contractor shall correct the stated deficiencies to the satisfaction of the Architect within fourteen (14) calendar days prior to demobilization from the site.
- C. After satisfactory completion of the above, the work shall be considered complete with notification by the Architect to the Owner.
- D. The Contractor shall submit all lien waivers and warranties at this time of final payment.

ROBBINS LIBRARY EXTERIOR ENVELOPE REPAIRS -PHASE 1A  
BID NO. 19-58  
ARLINGTON, MASSACHUSETTS  
CBI JOB NO.: 17152- A

CBI Consulting, LLC  
Boston, Massachusetts  
Tel: (617) 268-8977  
Fax: (617) 464-2971

- E. All guarantees, as required in any Section of the Project Manual shall be submitted for approval prior to final payment.
- F. Contractor shall maintain and record all changes to the plans throughout the entire project and shall submit as-built drawings of the entire project prior to final payment. As-built drawings must be in electronic form on Auto-CAD 2000 or later, submitted on CD. Electronic copies of the Architect's plans can be purchased from the Architect for a fee of \$50 per sheet and upon execution of a *CAD Release Form*. As-Builts shall be available on site for review by the Architect at any time during the project.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION



**DIVISION 01**

**GENERAL REQUIREMENTS**

**SECTION 01 72 00**

**SURVEYS AND RECORD DRAWINGS**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.01 RECORD DRAWINGS

- A. Record Drawings shall consist of all the Contract Drawings.
- B. From the sets of drawings furnished by the Owner, the Contractor shall reserve one set for record purposes. From this set, the Contractor shall detach and furnish, at no charge to the Subcontractors the drawings of their portion of the Work for the same purpose.
- C. The Contractor and the above Subcontractors shall keep their marked up As Built set on the site at all times and note on it in colored ink or pencil, neatly and accurately, at the end of each working day, the exact location of their work as actually installed. This shall include the location and dimensions of underground and concealed Work, and any architectural, mechanical, or electrical variations from the Contract Drawings. All changes, including those issued by Addendum, Change Order, or instructions by the Architect shall be recorded. Marked up As Built drawings shall be prepared for the entire project and include all Work, including but not limited to:

1. The location of all underground utilities and appurtenances referenced to permanent surface improvements, both horizontally and vertically at ten (10) foot intervals and at all changes of direction.
2. The location of all internal utilities and appurtunces, concealed by finish materials, including but not limited to valves, coils, dampers, vents, cleanouts, strainers, pipes, junction boxes, turning vanes, variable and constant volume boxes, ducts, traps, and maintenance devices.
  - a. The location of these, items shall be shown by offsets to structure and drawing grid lines.
  - b. The tolerance for the actual location of these items on the marked up As Built Drawings shall be plus or minus two (2) inches.
  - c. Each item shall be referenced by showing a tag number, areas served, and function on the marked up As Built drawing
- D. The Architect may periodically inspect the marked up As Built drawings at the site. The proper and current maintenance of the information required on these drawings shall be a condition precedent to approval of the monthly applications for payment.
- E. At Substantial Completion the Contractor shall submit the complete set of marked up As Built drawings to the Architect. The Contractor shall check all marked up As-Built drawings prepared by subcontractors and certify in writing on the title sheet of the drawings that they are complete and correct, prior to submission to the Architect.
- F. The Architect shall review the marked up As Built drawings and verify by letter to the Owner that the Work is complete.
- G. The Contractor may make a written request for copies of the completed Record Drawings. The Contractor shall reimburse the Owner directly for the cost of printing of any requested Record Drawings.
- H. Contractor shall maintain and record all changes to the plans throughout the entire project and shall submit as-built drawings of the entire project prior to final payment. As-built drawings must be in electronic form on Auto-CAD 2000 or later, submitted on CD. Electronic copies of the Architect's plans can be purchased from the Architect for a fee of \$50 per sheet.

END OF SECTION

**DIVISION 02**

**EXISTING CONDITIONS**

**SECTION 02 41 00**

**SELECTIVE DEMOLITION**

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect Work of this Section whether or not such Work is specifically mentioned in this Section.
- C. Coordinate Work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the Work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

- A. Provide all the Demolition Work required to complete the Work of the Contract including all the Demolition Work shown on the plans, listed in the specification, and needed to install a complete assembly in every way. Coordinate the Selective Demolition Work with all the other trades for the project. Provide all demolition and disposal Work to complete the Selective Demolition Work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All Work of the Contract is related. It is the General Contractor's responsibility to review all the Work of each section, and for each Subcontractor for the entire project so that all the Work can be properly and completely performed.
- B. In general, the Contractor shall supply all material, equipment, temporary protection, tools and appliances necessary for the proper removal of selected construction materials for the completion of the Work as required in the Specifications, in accordance with good construction, and as required by the materials manufacturer.

**SELECTIVE DEMOLITION**

- C. Supply all shoring and protection necessary to protect the occupants, building area, building systems, and landscape areas. All means and methods are the responsibility of the Contractor. The Contractor is solely responsible for safety on the job site.
- D. Selective demolition work shall be coordinated with all other Work of this Contract and remove only as much material that can be replaced with the specified new materials in order to achieve a complete watertight exterior system on a daily basis.
- E. The extent of the selective demolition as described on the drawings and in conjunction with all the new Work shown on the drawings. The Contractor is responsible for all selective demolition, disposal, and cleanup associated with the Work, whether or not shown on the plans or described herein required to complete the Work:
  - 1. Rout and Clean Existing Cracks in any sandstone detail or element. Total quantities of 50 linear feet in select and random locations across all elevations as selected by the Architect.
    - a. Refer to Unit Prices – Specification Section 01 22 00.
  - 2. Cut, remove and dispose existing of all existing vertical and horizontal joint sealant of the exterior granite stone stairs, including underlying mortar a minimum of 1-1/2-inches or until sound mortar from all granite stone stair and concrete landing.
    - a. Refer to Enlarge plan 1/ A4-01 and Detail 5A/ A4-01.
    - b. Refer to Unit Prices – Specification Section 01 22 00.
  - 3. Route and clean existing cracks in any architectural cast stone (1930s Building) detail or element. Total quantities of 25 linear feet in select and random location across all elevation selected by the Architect.
    - a. Refer to Unit Prices – Specification Section 01 22 00.
  - 4. Remove and Dispose of existing Architectural Cast Stone Window Head in Two (2) Locations as selected by the Architect. Temporarily shore and support opening.
    - a. Refer to Unit Prices – Specification Section 01 22 00.
    - b. Refer to Deduct Alternate No. 3.

5. Cut out and dispose spalls, chips and delamination in the Architectural Cast in place stone exist stairs of the 1930's Building. Cut out a minimum 1" deep & square off all edges. Total quantity of 208 cubic inches in select and random locations across all elevation selected by the Architect.
  - a. Refer to Unit Prices – Specification Section 01 22 00.
6. Cut, Remove and Dispose of existing rubber gasket flush with panel frame. Clean and prime surfaces prior to application of silicone sealant.
  - a. Refer to Deduct Alternate No. 2.
7. Cut out and dispose spalls, chips and delamination in the Architectural Cast in place stone exit stairs of the 1930's Building
  - a. Refer to Unit Prices – Specification Section 01 22.
  - b. Refer to Deduct Alternate No. 2.
8. Cut, remove and dispose existing architectural cast stone (1930's building) window trim, moulding, column pilasters and column capitol mortar joints including horizontal bed joints and vertical running joints.
  - a. Refer to Unit Prices – Specification Section 01 22 00.
  - b. Refer to Deduct Alternate No. 2.

### 1.03 RELATED WORK

- A. The following items of related Work are specified and included in other Sections of the Specifications:
  1. Section 04 01 40 – Stone Masonry Restoration
  2. Section 04 72 00 – Architectural Cast Stone
  3. Section 07 92 13 – Sealants and Caulking

### 1.04 QUALITY ASSURANCE

- A. Supervision:
  1. Engage and assign supervision of shoring and bracing Work to qualified personnel.

B. Regulations:

1. Comply with local codes and ordinances of governing authorities having jurisdiction.

1.05 SUBMITTALS

A. Schedule:

1. Submit schedule indicating proposed methods and sequence of operations for Selective Demolition.
2. Include coordination for shut-off, capping, and continuation of utility services in scope area.

1.06 JOB CONDITIONS

A. Condition of Structures:

1. Owner assumes no responsibility for actual condition of items or structures to be demolished.
2. Conditions existing at time of commencement of Contract will be maintained by Owner insofar as practicable.

B. Protections:

1. Provide temporary barricades and other forms of protection to protect Owner's personnel and general public from injury due to selective demolition Work. Safety is the sole responsibility of the Contractor.
2. Provide protective measures to provide free and safe passage of Owner's personnel and general public to and from area of selective demolition.
3. Erect temporary covered passageways as required by authorities having jurisdiction.
4. Take measures to protect against windblown dust, obtain Owner's approval of means used for dust control.
5. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structure or element to be demolished, and adjacent facilities or Work to remain.

6. Protect from damage existing finish Work that is to remain in place and becomes exposed during demolition operations.
  7. Protect adjacent materials and finishes with suitable coverings when necessary including, but not limited to, automobiles in parking lot adjacent to building which will remain in use during Work to be performed.
  8. Remove protections at completion of Work.
- C. Damages: Promptly repair damages caused to building or property, including cars, by demolition Work at no cost to Owner.
- D. Traffic:
1. Conduct Selective Demolition operations and debris removal in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
  2. Do not close, block, or otherwise obstruct streets, walks, parking lot, or other occupied or used facilities without written permission from the authorities having jurisdiction.
  3. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- E. Utility services:
1. Maintain existing utilities, keep in service, and protect against damage during demolition operations.
  2. Do not interrupt existing utilities service occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide 48 hour notice if service must be interrupted.
  3. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.
- F. Environmental Controls:
1. Comply with governing regulations pertaining to environmental protection.
  2. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.

## PART 2 – PRODUCTS – NOT USED

## PART 3 – EXECUTION

### 3.01 INSPECTION

- A. Before start of Selective Demolition Work, inspect areas in which Work will be performed.

### 3.02 PREPARATION

- A. Structure Safety:
  - 1. Provide exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structures to be demolished and adjacent facilities to remain.
  - 2. Cease operations and notify the Owner's Representative immediately if safety of structure appears to be endangered.
  - 3. Take precautions to support structure until determination is made for continuing operations.
- B. Shoring and Bracing
  - 1. If shoring and bracing is required, locate the system to clear permanent construction and to permit the completion of the Work.
  - 2. Provide shoring and bracing system adequately anchored and braced to resist natural forces.
  - 3. No shoring and bracing system shall remain at the completion of the Work.

### 3.03 DEMOLITION

- A. General:
  - 1. Perform Demolition Work in a systematic manner.
  - 2. Use such methods as required to complete Work indicated on Drawings in accordance with Demolition Schedule and governing regulations.



3. If unanticipated mechanical, electrical, or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict with Consultant.

B. Disposal of Demolished Materials:

1. Remove debris, rubbish, and other materials resulting from demolition operations from site.
2. Transport and legally dispose of materials off site.
3. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution. Present receipts from certified waste disposal firms confirming hazardous waste disposal.
4. Burning of removed materials is not permitted on project site.

3.04 CLEANING AND REPAIR

- A. On completion of demolition Work, remove tools, equipment, and demolished materials from site. Remove debris on a daily basis.
- B. Remove protection and leave areas broom clean.
- C. Repair demolition performed in excess of that required.
- D. Repair adjacent construction or surfaces soiled or damaged by selective demolition Work.

END OF SECTION

**DIVISION 02**

**EXISTING CONDITIONS**

**SECTION 02 90 10**

**LANDSCAPING REPAIR**

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

- A. Provide all the Landscaping Repair Work required to complete the work of the contract including all the Landscaping Repair Work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Landscaping Repair Work with all the other trades for the project. Provide all demolition and disposal work to complete the Landscaping Repair Work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor's responsibility to review all the work of each section, each Subcontractor, and each file sub-bidder for the entire project so that all the work can be properly and completely performed.
- B. Landscaping Repair Work includes, but is not limited to, replacing and planting of trees, shrubs and grass, including mulching, staking and related planting procedures of landscaping items **only if damaged during construction.**

- C. Provide video and photograph documentation of the site before mobilization as a record of the existing landscape conditions before the work starts.

### 1.03 QUALITY ASSURANCE

- A. Comply with "Standardized Plant Names" as adopted by the latest edition of the American Joint Committee of Horticultural Nomenclature. Names of varieties not listed conform generally with names accepted by the nursery trade. Provide stock true to botanical name and legibly tagged.
- B. Comply with sizing and grading standards of the latest edition of "American Standard for Nursery Stock". A plant shall be dimensioned as it stands in its natural position.
- C. All plants shall be nursery grown under climatic conditions similar to those in the locality of the project for a minimum of 2 years.

## PART 2 – PRODUCTS

### 2.01 TOPSOIL

- A. Topsoil shall be a fertile, friable natural topsoil not excessively acid or alkaline and free of toxic substances harmful to plant growth. Topsoil shall be without admixture of subsoil and free from clay lumps, stumps, roots, debris, stones, or other similar substances 2" or more in diameter.

It shall be obtained from a well-drained arable site with a history of good plant growth. Submit sample for approval by the Landscape Architect.

### 2.02 SLUDGE FERTILIZER

- A. Sludge fertilizer shall be an organic activated, granular, heat dried sludge and shall contain the following minimum percentages by weight: 6% Nitrogen, 4% Phosphoric Acid, and other nutritious basic elements. The sludge fertilizer shall be delivered as specified in standard size bags, showing weight analysis and name of processor and shall be stored in a weatherproof storage place.

### 2.03 WATER

- A. Water will be furnished by Owner on the site. Hose and other watering equipment shall be furnished by Contractor.

## 2.06 PLANT MATERIALS

- A. Contractor shall replace in kind and plant all plants or lawn damaged or killed during construction. No substitutions will be permitted. All plants shall be nursery grown unless specifically authorized to be collected.
- B. Plant shall be in accordance with the USA Standard for Nursery Stock of the American Association of Nurserymen.
- C. All plants shall be typical of their species or variety and shall have a normal habit of growth and be legibly tagged with the proper name. All plants shall have been grown under climatic conditions similar to those in the locality of the site of the project under construction, or have been acclimated to such conditions for at least 2 years. Trees shall have straight trunks and all abrasions and cuts shall be completely culled over.
- D. The root system of each shall be well provided with fibrous roots. All parts shall be sound, healthy, and vigorous, well branched and densely foliated when in leaf. They shall be free of disease, insect pests, eggs or larvae.
- E. All plants must be moved with the root systems as solid units with balls of earth firmly wrapped with burlap. The diameter and depth of the balls of earth must be sufficient to encompass the fibrous root feeding system necessary for the healthy development of the plant. No plant shall be accepted when the ball of earth surrounding its roots has been badly cracked or broken preparatory to or during the process of planting or after the burlap, staves, ropes or platform required in connection with its transplanting have been removed. The plants and balls shall remain intact during all operations. All plants shall be freshly dug. No plants from cold storage or previously heeled-in will be accepted. All plants that cannot be planted at once must be heeled-in by setting in the ground and covering the balls with soil and then watering.
- F. The height of the trees (measure from the crown of the roots to the tip of the top branch) shall be not less than that of the tree being replaced. All cuts shall be shellacked. The trunk of each tree shall be a single trunk growing from a single unmutilated crown of roots. No part of the trunk shall be conspicuously crooked as compared with normal trees of the same variety. The trunk shall be free from sunscald, frost cracks, or wounds resulting from abrasions, fire or other causes. No pruning wounds shall be present having a diameter exceeding 2" and such wounds must show vigorous bark on all edges. No trees which have had their headers cut will be accepted.

- G. Shrubs shall meet the requirements for spread of height of the shrub being replaced. The measurements for height are to be taken from the ground level to the average height of the shrub and not to the longest branch. The thickness of each shrub shall correspond to the trade classification No. 1.

## 2.07 MULCH

- A. Mulch material shall be softwood hemlock bark shredded into fibrous pliable slices generally not exceeding 1/2" in width.

Mulch shall be 98% organic matter with the pH range 3.5 to 4.5. Moisture content of packaged material shall not exceed 35%. Submit sample.

## 2.08 STAKING MATERIALS

- A. Stakes for supporting trees shall be of sound wood, uniform in size, free of knots and holes. They shall be nominal 2" x 4" and 10' long for support staking, 3' long for guy wire anchor stakes. Stakes shall be stained dark brown.
- B. Wire for tree bracing and guying shall be pliable No. 12 gauge galvanized steel.
- C. Hose for covering wire shall be new or used 2 ply reinforced rubber garden hose not less than 1/2" inside diameter.
- D. Wrapping material shall be first quality, heavy waterproof crepe paper manufactured for this purpose, or first quality burlap not less than 4" nor more than 6" wide of suitable strength and manufactured for this purpose.

## 2.09 SEED

- A. Seed mixture shall be fresh, clean, new crop seed. Grass shall be of the previous year's crop and in no case shall the weed seed content exceed 0.25% by weight. The seed shall be furnished and delivered in the proportion specified below in new, clean, sealed and properly labeled containers. All seed shall comply with State and Federal seed laws. Submit manufacturer's Certificates of Compliance. Seed that has become wet, moldy or otherwise damaged shall not be acceptable. Chewings fescue, hard fescue, tall fescue and ryegrass shall contain *Acromonium* endophytes. Seed containing endophyte must be kept cool and dry at all times; do not stockpile in the sun.

1. Seed Mixture Composition (not to be used on terraces)

	Proportion	Germination	Purity
<u>Common Name</u>	<u>By Weight</u>	<u>Minimum</u>	<u>Minimum</u>

Creeping Red Fescue	50%	85%	95%
Kentucky Bluegrass	40%	85%	90%
Perennial Rye	10%	90%	90%

- a. Bluegrass and ryegrass varieties shall be within the top 50 percent and 25 percent respectively, of varieties tested in National Turfgrass Evaluation Program, or currently recommended as low maintenance varieties by University of Massachusetts or the University of Rhode Island.
- b. Seeding rate for the General Lawn Seed Mix shall be 6 pounds per 1,000 square feet.

### PART 3 - EXECUTION

#### 3.01 METHODS

- A. Personnel: The planting and lawn construction shall be performed by personnel familiar with the accepted procedure of planting and under the constant supervision of a qualified planting foreman.
- B. Planting Seasons:
  1. Deciduous plants shall be planted only when dormant, that is, before leaves appear in the spring and subsequent to their loss in the fall, unless otherwise directed by the Architect.
  2. Evergreen plants may be planted in the spring until new growth appears and any time between September 15 and November 30.
  3. If the building completion date prohibits in-season planting, the Contractor shall complete his work within the project date and prepare himself for out-of-season planting, including wiltproofing and extra watering.

Plant guarantee periods remain as stated below. No frozen ground planting.
- C. Lawn Replacement
  1. Remove all areas of dead lawn including root system. The Architect shall be the sole authority as to the extent of lawn replacement areas.

2. Contractor to provide a minimum of 6" of new loam in all areas of lawn replacement. Peat moss shall be mixed into existing hard and/or clay type soil. Architect shall determine the need for and amounts of peat moss required.
3. New grass shall be sod of rye grass, blue grass or a combination of both.
4. Apply starter fertilizer to all areas of newly planted grass.
5. Maintain constant moist soil conditions, a minimum of thirty days.

D. Planting of Trees, Shrubs, and Vines:

1. Unless otherwise directed by the Architect, the indication of a plant to be replaced is to be interpreted as including the digging of a hole, furnishing a plant of the specified size, the work of planting and mulching, and guying, staking and wrapping where called for.
2. The following shall be added to each area of lawn replacement:
  - 1 lb. sludge fertilizer
  - 1 lb. bone meal
  - 1 lb. cottonseed meal
3. Locations for all plants shall be staked on the ground and must be approved by the Architect before any excavation is made. Adjustments in locations and outlines shall be made as directed. In the event that areas for planting are prepared and backfilled to grade prior to commencement of lawn operations, they shall be so marked that when the work of planting proceeds, they can be readily located.
4. Holes for trees shall be at least 2' greater in diameter than the spread of the root systems and at least 6" deeper than root ball. Holes for shrubs and vines shall be at least 12" greater in diameter than the spread of the root system and at least 18" deep.
5. Specified backfill mixture shall be spread and incorporated with loam in all areas of tree or lawn replacement and as directed by the Architect.

6. Planting: All plant roots and earthballs must be kept damp and thoroughly protected from sun and/or drying winds at all times from the beginning until the final operation, during transportation, and on the ground until the final operation of planting. The plants shall be planted in the center of the holes and at the same depth as they previously grew. They shall be plumbed and turned as directed. Specified Mixture shall be backfilled in layers of not more than 9" and each layer watered sufficiently to settle before the next layer is put in place. Backfill Mixture shall be tamped under edges of balled plants. Enough Backfill Material shall be used to bring the surfaces to finish grade when settled.
  - a. Plants must be flooded with water twice within the first 24 hours of time of planting.
  - c. Wrapping: The trunks of all shade trees shall be wrapped spirally from the ground to the height of the second branches or as directed. Wrap brown cord 3" on center spirally to hold paper neatly in place.
  - d. Provide a 3" layer (after settlement) of bark mulch over the surface of each saucer and over the entire area of shrub beds.
  - e. Stake all trees.

E. PLANTING COORDINATION:

1. Replacement plantings must match existing for type and caliber of trees and size of shrubs.
2. The Contractor shall be responsible for selection and tagging at nurseries stocking the specified materials.
3. Contractor shall inform Architect when planting will commence, anticipated delivery date of material and have made and provided for the staking of all plants and plant bed.
4. Failure to notify the Architect in advance, in order to arrange proper scheduling may result in loss of time or removal of any plant or plants not installed as specified or directed.

3.02 PRUNING

- A. Each tree and shrub shall be pruned in accordance with American Nurserymen Association Standards to preserve the natural character of the plant.



- B. All dead wood or suckers and all broken or badly bruised branches shall be removed. In addition, 1/3 of the wood may be removed by thinning out to balance root loss due to transplanting providing the natural character and form of the tree is preserved. Never cut a leader.
- C. Pruning shall be done with clean, sharp tools.
- D. Cuts over 1" in diameter shall be painted with an approved asphaltic tree paint. Paint shall cover all exposed living tissue.

### 3.03 MAINTENANCE

- A. Maintenance shall begin immediately after each plant is planted. Plants shall be watered, mulched, weeded, pruned, sprayed, fertilized, cultivated and otherwise maintained and protected for a minimum of 30 days until provisional acceptance. Settled plants shall be reset to proper grade and position, planting saucer restored and dead material removed. Stakes and wire shall be tightened and repaired.

Defective work shall be corrected as soon as possible after it becomes apparent and weather and season permit.

- B. Upon completion of planting and prior to provisional acceptance, remove from the site excess soil and debris, and repair all damage resulting from planting operations.

### 3.04 ACCEPTANCE AND GUARANTEE

- A. After the 30-day maintenance period, if the plant materials and workmanship are deemed by the Owner and Architect to be acceptable, a one (1) year warranty period shall begin and recorded on the Certificate of Substantial Completion. The warranty period will commence on the date of acceptance by the Owner and Architect. Plants shall be alive and in satisfactory growth at the end of the guarantee period.
- B. If a substantial number of plants are sickly or dead at the time of inspection, acceptance will not be granted, and the Contractor's responsibility for maintenance of all plants shall be extended until replacements are made. Replacements shall conform in all respects to specifications for new plants and shall be planted in the same manner.

- C. **Materials and Operations:** All replacements shall be plants of the same kind and size specified on the plant list. They shall be furnished and planted as specified above. The cost shall be borne by the Contractor. Replacements resulting from the removal, loss or damage, due to occupancy of the project in any part, vandalism, or acts of neglect on the part of others, physical damage by animals, vehicles, etc., and losses due to curtailment of water by local authorities, will be approved and paid for by the Owner.
  
- E. At the end of the guarantee period, inspection will be made again. Any plant required under this Contract that is dead or unsatisfactory shall be removed from the site. These shall be replaced during the normal planting season, until the plants live through one year.

END OF SECTION

**DIVISION 04**

**MASONRY**

**SECTION 04 01 40**

**STONE MASONRY RESTORATION**

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

- A. Provide all the Stone Masonry Restoration work required to complete the work of the contract including all the Stone Masonry Restoration work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Stone Masonry Restoration work with all the other trades for the project. Provide all demolition and disposal work to complete the Stone Masonry Restoration work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor's responsibility to review all the work of each section, each Subcontractor, and each file sub-bidder for the entire project so that all the work can be properly and completely performed.

- B. Stone Masonry Restoration work includes, but is not limited to:
1. Route and clean existing cracks in any sandstone (1890's building) detail or element, and fill cracks with injection restoration repair mortar. Total quantity of 50 lineal feet in select and random locations across all elevations as selected by architect.
    - a. Refer to Unit Prices – Specification Section 01 22 00
  2. Replace existing sealant and mortar joints of the exterior granite stone stairs, with intermediate concrete landing at the main entrance of the 1890's Library Building. Cut, remove and dispose 100% of all existing vertical and horizontal joint sealants, including underlying mortar a minimum of 1-1/2-inches or until sound mortar from all granite stone stair and concrete landing joints. Apply new pointing mortar to within 1/2-inch of the surface and apply polyurethane sealant to seal all granite stone joints and concrete landing joints. Power wash clean the entire stair.

#### 1.03 RELATED WORK

- A. The following items of related Work are specified and included in other Sections of the Specifications:
1. Section 02 41 00 – Selective Demolition
  2. Section 04 72 00 – Architectural Cast Stone
  3. Section 07 92 13 – Sealants and Caulking

#### 1.04 REFERENCE STANDARDS

- A. ANSI A41.1 - "Building Code Requirements for Masonry".
- B. ASTM C-615 Granite Building Stone
- C. NBGQA: National Building Granite Quarries Association.
- D. NCMA.

#### 1.05 SUBMITTALS

- A. Submit complete shop drawings in accordance with the provisions of SECTION 01300 - SUBMITTALS in GENERAL REQUIREMENTS.
1. Product Data: Submit manufacturer's product data for each type of manufactured products, including certifications that each type complies with specified requirements.

B. Samples:

1. Repair Mortar Samples

- a. For all repair mortar, provide custom samples to match existing stone masonry for color, texture and finish, and profile.
- b. Sample size: Minimum 2ft x 2ft, for each type.
- c. Quantity of Samples: Unlimited until approved by Owner and Architect.

2. Mortar Samples

- a. For all pointing of stone mortar joints, provide custom samples to match existing mortar for color, texture and finish, and profile.
- b. Sample size: Minimum 2ft x 2ft.
- c. Quantity of Samples: Unlimited until approved by Owner and Architect.

1.06 QUALITY CONTROL

- A. Manufacturers: Company specializing in masonry restoration products with minimum 10 years' experience.
- B. Restoration Specialist Qualifications: Engage an experienced, masonry restoration and cleaning firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in service performance.
  1. Field Supervision: Restoration specialist firms shall maintain experienced full-time supervisors on Project site during times that clay masonry restoration and cleaning and coating are in progress. Supervisors shall not be changed during Project except for causes beyond the control of restoration specialist firm.
  2. Restoration Worker Qualifications: Persons who are experienced and specialize in restoration work of types they will be performing.
- C. Installer: Company specializing in installing cut stone with 5 years documented experience and approved by stone supplier. Stone installation shall be by qualified journeyman stone masons.
  1. Workmen: Employ only journeymen stonemasons and masons for the work of this Contract.

- E. All masonry work shall be performed in accordance with Recommended Best Practices as established by the Building Stone Institute (BSI)
- F. Design anchors and supports under direct supervision of experienced Registered Professional Engineer registered in the State of Massachusetts.

#### 1.07 ENVIRONMENTAL REQUIREMENTS

- A. Do not install patching material or new stone when temperature may drop below 50 degrees F within 24 hours and when there is an immediate danger of freezing of the materials to be applied.
- B. Adhere to manufacturer's recommendations.

#### 1.08 PROTECTION

- A. Protect adjacent surfaces from damage, and immediately remove stains, efflorescence, or other unsightly excess resulting from the work of this Section.

### PART 2 - PRODUCTS

#### 2.01 POINTING MORTAR

- A. Mortar: Shall conform to ASTM C270, Type N, consisting of one (1) part Portland Cement (ASTM C150, Type 1, and meeting efflorescence requirements below), 1/2 to 1-1/4 parts hydrated lime (ASTM C207, Type S), and sand (ASTM C144) in quantity of not less than 2-1/2 nor more than 3 times the sum of the quantities of cement and lime, by volume.
- B. New mortar shall be custom to match the original mortar in color, texture, aggregate and finish.
- C. Tooled joint shall match original including depth of joint, shape of joint as well as amount of aggregate exposed.
- D. Water: Clean and free of deleterious amounts of oil, acid, alkalis and organic matter.
- E. No admixtures of any type will be permitted.
- F. Mixing:
  - 1. Measure materials by volume or equivalent weight.
  - 2. Do not measure by shovel. Use known measure.
  - 3. Mix ingredients in clean mechanical batcher for 3-5 minutes.

4. Let mortar sit for 20 minutes prior to use to allow for initial shrinkage. Use mortar within 1 hours of initial mixing. Do not re-temper.

## 2.02 STONE INJECTION GROUTS

### A. Micro Injection Grout for cracks less than 3/16"

1. M31 by Jahn Restoration Mortars as distributed by Cathedral Stone® Products, Inc., 7266 Park Circle Drive, Hanover, MD 21076; tel. (410) 782-9150; fax. (410) 782-9155; website: [www.cathedralstone.com](http://www.cathedralstone.com) email: [info@cathedralstone.com](mailto:info@cathedralstone.com) or APPROVED EQUAL.
2. M32 by Jahn Restoration Mortars as distributed by Cathedral Stone® Products, Inc., 7266 Park Circle Drive, Hanover, MD 21076; tel. (410) 782-9150; fax. (410) 782-9155; website: [www.cathedralstone.com](http://www.cathedralstone.com) email: [info@cathedralstone.com](mailto:info@cathedralstone.com) or APPROVED EQUAL.

### B. Macro Injection Grout for cracks less from 3/16" to 9/16"

1. M40 by Jahn Restoration Mortars as distributed by Cathedral Stone® Products, Inc., 7266 Park Circle Drive, Hanover, MD 21076; tel. (410) 782-9150; fax. (410) 782-9155; website: [www.cathedralstone.com](http://www.cathedralstone.com) email: [info@cathedralstone.com](mailto:info@cathedralstone.com).

## 2.03 STONE MASONRY PATCHING

### A. Stone Patching

1. Single-component, pre-mixed cementitious mineral based mortar that is vapor permeable and replicates the physical properties of the existing stone. Patching material shall not contain any latex, or other synthetic polymer additives.
2. Product: M70 by Jahn Restoration Mortars as distributed by Cathedral Stone® Products, Inc., 7266 Park Circle Drive, Hanover, MD 21076; tel. (410) 782-9150; fax. (410) 782-9155; website: [www.cathedralstone.com](http://www.cathedralstone.com) email: [info@cathedralstone.com](mailto:info@cathedralstone.com).

## 2.04 CLEANING AGENTS

- A. Light Duty Restoration Cleaner: Detergent, solvent cleaner, non-acid solution type: as manufactured by Prosoco, Sure Klean, or equal.
- B. Heavy Duty Restoration Cleaner: Detergent, solvent cleaner, non-acid solution type: as manufactured by Prosoco, Sure Klean, or equal.

## PART 3 - EXECUTION

### 3.01 MORTAR APPLICATION

- A. Rake out all stone joints in designated areas by hand using a chisel no wider than 3/4 (three fourths) joint width. Remove all unrequired metal fasteners from stone joints.
- B. Clean all mortar from surfaces within the joint or crack so that the new pointing mortar bonds to the building material, not old mortar. Do not chip or spall edges of the stone. More than one chip per square yard will be unacceptable. If work is found unacceptable, all raking will cease without additional cost to the Owner until deficiencies in tools, workers or methodologies have been corrected to the Architect's satisfaction.
- C. Joint depth to be at least 3/4-inches or shown on drawings, but in all cases rake back to expose sound mortar.
- D. Brush, vacuum or flush joints to remove all dirt and loose debris.
- E. Reduce initial absorption of the stone by thoroughly wetting stone surface with clean water just prior to repointing. Do not allow water to pool on surface of the stone.
- F. Pack joints with mortar leaving no voids. Place mortar in layers not exceeding 1/4 inch in depth. Apply succeeding layers only after preceding layer has taken initial set.
- G. Use clean tools and equipment free from hardened or partially set mortar.
- H. Clean excess mortar from stone and joints, removing splashed mortar and droppings immediately
- I. Do not retemper or use mortar which has partially set, is caked, or is lumpy.
- J. Tool horizontal and vertical face joints flush, dense and smooth after mortar has taken initial set. Do not allow mortar to extend over the stone surface.
- K. Curing: Keep joints damp (90% RH) for at least 72 hours or until surface is cured. Protect joints from rapid drying due to wind (i.e., covering tarps, enclosure on scaffolding).
- L. Adjusting/Cleaning of Mortar Joints
  - 1. At the time of pointing of the stone, immediately remove mortar, grout and sealant from the face of the masonry.



2. Use only tools and equipment which are clean and free of hardened or partially hardened material.
3. Clean stone only with fiber bristle brushes and water. Use no acids, detergents, or other cleaning agents.

### 3.02 CRACK INJECTION

#### A. Workmanship:

1. All areas involved in the work shall be inspected by the Contractor to establish extent of work, access, and need for protection of surrounding construction, landscaping, etc. If conditions are not as expected, notify the Architect/Engineer immediately for direction. Do not proceed with work until unsatisfactory conditions are corrected.
2. Grout workmanship should comply with all applicable recommendations of the Manufacturer's written specifications and requirements.
3. Do not add any bonding agents, accelerators, or retarders to the grout.
4. Discard all grout that has hardened or exceeded its allowable pot life after mixing. Provide separate, clearly labeled containers for discarded grout and remove material from the staging area as soon as practical.

#### B. Preparation:

1. Transverse Cracks: For cracks across the face of the masonry unit, drill a series of injection ports in the center of the crack. These ports should be drilled in a downward direction. Between the ports, the crack should be sealed with removable, non-staining clay or repaired with the appropriate Jahn Mortar.
2. Lateral Cracks (Delaminating Layers) or Voids: Drill a series of injection ports in a square configuration (90° angles) on the face of the substrate to create a "drill frame". Ports should be drilled in a downward direction.
3. Wash the surface and interior of the crack using clean water to remove all dust, or loose and deleterious material, which could prevent proper flow and/or adhesion, compromising the integrity of the cured injection grout.

#### C. Mixing:

1. It is recommended that safety goggles, gloves, and a dust mask be worn for protection. Do not mix more material than can be used within approximately 30 minutes. Discard any mixed material that has been unused for 30 minutes or more.

2. Jahn M31/M32:
  - a. The mixing ratio is approximately 2 to 5 parts powder to 1 part water by volume.
  - b. Mix mechanically using a high-speed drill (3,000 RPM or higher) equipped with a Jiffler type mixing paddle. After mixing, the mortar should be poured into another clean container using a sieve. Continued agitation is necessary if the mortar is allowed to sit prior to use.
  
3. Jahn M40:
  - a. The mixing ratio is approximately 2 – 2 1/2 parts powder to 1 part water by volume.
  - b. Mix manually or mechanically, using a slow speed drill (400-600 RPM) equipped with a Jiffler type-mixing paddle. The material should be mixed for a minimum of three minutes, with continued agitation should the product be allowed to sit prior to use.

D. Injection Procedure:

1. Wash the interior of the crack immediately before injection by flushing with clean water. If the crack is allowed to dry out before grout is injected, this step must be repeated.
2. Treatment of Transverse Cracks: Inject grout into lowest port and continue until it flows freely from this port and other ports at the same level. Seal ports using non-staining clay, sealant, or caulk and proceed in identical fashion until the crack is filled. Clean up overflow immediately.
3. Treatment of Lateral Cracks (Delaminating Layers) or Voids: Inject grout into lower left port and proceed until it flows freely from this port and other ports at the same level. Where necessary, insert threaded stainless steel dowels after some grout has been injected, agitate or tap several times to remove any voids or air pockets, and inject the remainder of the grout until port is full and grout flows freely from other ports at the same level. Seal ports using non-staining clay, sealant, or caulk. Inject grout into lower right port and proceed in identical fashion. The order of injection is lower left, lower right, upper left, then upper right. Clean up overflow immediately.

E. Finishing:

1. Remove plugs after 24 to 48 hours and repair the ports and the crack surface, if not previously performed, using an appropriate Jahn Mortar to match color and type of existing masonry.
- F. Clean Up:
1. Remove uncured mortar from substrate before it dries using clean water and a rubber sponge. Cured mortar may only be removed chemically or mechanically.
  2. Remove uncured mortar from tools and equipment with water as soon as possible. Cured material may only be removed chemically or mechanically.

END OF SECTION

**DIVISION 04**

**MASONRY**

**SECTION 04 72 00**

**ARCHITECTURAL CAST STONE**

**PART 1 – GENERAL**

**1.01 GENERAL REQUIREMENTS**

- A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect Work of this Section whether or not such Work is specifically mentioned in this Section.
- C. Coordinate Work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the Work shall be new and of the best grade of their respective kinds.

**1.02 WORK TO BE PERFORMED**

- A. Provide all the Architectural Cast Stone Work required to complete the Work of the Contract including all the Architectural Cast Stone Work shown on the plans, listed in the specification, and needed to install a complete assembly in every way. Coordinate the Architectural Cast Stone Work with all the other trades for the project. Provide all demolition and disposal Work to complete the Architectural Cast Stone Work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All Work of the Contract is related. It is the General Contractor's responsibility to review all the Work of each section, and for each Subcontractor for the entire project so that all the Work can be properly and completely performed.

- B. Architectural Cast Stone Work includes, but is not limited to:
1. Route and clean existing cracks in any Architectural Cast Stone (1930s Building) Detail or Element, and fill cracks with injection restoration repair mortar. Total Quantities of 25 Linear Feet in select and random locations across all elevation selected by the Architect.
    - a. Refer to Unit Prices – Specification Section 01 22 00.
  2. Remove and dispose of existing Architectural Cast Stone (1930's Building) Window Head in Two (2) locations as selected by the Architect. Temporarily Shore and Support opening, Fabricate and Install new reinforced Architectural Pre-Cast head to match size, texture and color.
    - a. Refer to Unit Prices – Specification Section 01 22 00.
    - c. Refer to Deduct Alternate No. 3
  3. Cut out and dispose of spalls, chips and delamination's in the existing Architectural Cast Stone (1930's Building) window sills. Cut out a minimum 1/2" deep & square off all edges. Clean surface & apply single component, cementitious mineral based repair mortar. Total quantity of 208 cubic inches in select and random locations across all elevation selected by the Architect.
  4. Cut out and dispose spalls, Chips and Delamination in the Architectural cast in place stone exit stairs of the 1930's Building. Cut out a minimum 1/2" deep and square off all edges. Clean surface and apply single component, cementitious mineral based repair mortar.
    - a. Refer to Deduct Alternate No.1.
  5. Replace existing sealant and mortar joints at the exit stairs of the 1930's Building. Cut, Remove and Dispose of 100% all existing Vertical and Horizontal joint sealants, including underlying mortar a minimum of 1-1/2-Inches until sound mortar form all Architectural Cast in place Stone stairs and landing. Apply new pointing mortar to within 1/2-inch of the Surface and Apply Polyurethane Sealant to all cast in place stone stairs and landing joints. Stairs shall be power washed cleaned.
    - a. Refer to Deduct Alternate No. 1

### 1.03 RELATED WORK

- A. The following items of related Work are specified and included in other Sections of the Specifications:
  - 1. Section 02 41 00 – Selective Demolition
  - 2. Section 04 01 40 – Stone Masonry Restoration
  - 3. Section 07 92 13 – Sealants and Caulking

### 1.04 REFERENCES

- A. ACI 318 – Building Code Requirements for Reinforced Concrete.
- B. ASTM A 185 - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
- C. ASTM A 615/A 615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Reinforced Concrete.
- D. ASTM C 33 – Standard Specification for Concrete Aggregates.
- E. ASTM C 150 - Standard Specification for Portland Cement.
- F. ASTM C 595 – Blended Cement
- G. ASTM C 1157 – Hydraulic Cement
- H. ASTM C 173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volume Method.
- I. ASTM C 231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
- J. ASTM C 260 - Standard Specification for Air-Entrained Admixtures for Concrete.
- K. ASTM C 270 - Standard Specification for Mortar for Unit Masonry.
- L. ASTM C 426 – Standard Test Method for Linear Shrinkage of Concrete Masonry Units.
- M. ASTM C 494/C 494M - Standard Specification for Chemical Admixtures for Concrete.

- N. ASTM C 618 – Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
- O. ASTM C 666 – Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.
- P. ASTM C 979 - Standard Specification for Coloring Pigments for Integrally Pigmented Concrete.
- Q. ASTM C 989 – Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete.
- R. ASTM C 1116 – Standard Specification for Fiber Reinforced Concrete and Shotcrete.
- S. ASTM C 1194 – Standard Test Method for Compressive Strength of Architectural Cast Stone.
- T. ASTM C 1195 – Standard Test Method for Absorption of Architectural Cast Stone.
- U. ASTM C 1364 – Standard Specification for Architectural Cast Stone.
- V. ASTM D 2244 – Standard Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.

#### 1.05 SUBMITTALS

- A. Samples:
  - 1. Submit pieces of the Cast Stone that are custom and representative of the range of finish and color proposed to be furnished for the project.
- B. Test Results:
  - 1. Submit manufacturers test results of Cast Stone previously made by the manufacturer.
- C. Shop Drawings:
  - 1. Submit manufacturers shop drawings including profiles, cross-sections, reinforcement, exposed faces, arrangement of joints, anchoring methods, anchors (if required), annotation of stone types and their location.

D. Architectural Cast Samples

1. Provide custom samples to match existing architectural cast stone masonry for color, texture and finish, and profile.
2. Sample size: Minimum 2ft x 2ft, for each type.
3. Quantity of Samples: Unlimited until approved by Owner and Architect.

E. Repair Mortar Samples

4. For all repair mortar, provide custom samples to match existing architectural cast stone masonry for color, texture and finish, and profile.
5. Sample size: Minimum 2ft x 2ft, for each type.
6. Quantity of Samples: Unlimited until approved by Owner and Architect.

F. Mortar samples

1. For all pointing of stone mortar joints, provide custom samples to match existing mortar for color, texture and finish, and profile.
2. Sample size: Minimum 2ft x 2ft.
3. Quantity of Samples: Unlimited until approved by Owner and Architect.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Cast Stone shall be produced in a plant certified by the Cast Stone Institute.
2. Manufacturer shall have sufficient plant facilities to produce the shapes, quantities and size of Cast Stone required in accordance with the project schedule.



3. Manufacturers shall submit a written list of projects similar in scope and at least three (3) years of age, along with owner, architect and contractor references.
- B. Standards:
1. Comply with the requirements of the Cast Stone Institute® Technical Manual and the project specifications. Where a conflict may occur, the contract documents shall prevail.
  2. Mock-up - Provide full size unit(s) for use in construction of sample wall. The approved mock-up shall become the standard for appearance and workmanship for the project.
- C. Supervision:
1. Engage and assign supervision of shoring and bracing Work to qualified personnel.
- D. Warranty Period:
1. Ten (10) years.

## PART 2 – PRODUCTS

### 2.01 POINTING MORTAR

- A. Mortar: Shall conform to ASTM C270, Type N, consisting of one (1) part Portland Cement (ASTM C150, Type 1, and meeting efflorescence requirements below), 1/2 to 1-1/4 parts hydrated lime (ASTM C207, Type S), and sand (ASTM C144) in quantity of not less than 2-1/2 nor more than 3 times the sum of the quantities of cement and lime, by volume.
- B. Mortar shall be custom match the original mortar in color, texture, aggregate and finish.
- C. Tooled joint shall match original including depth of joint, shape of joint as well as amount of aggregate exposed.
- D. Water: Clean and free of deleterious amounts of oil, acid, alkalis and organic matter.
- E. No admixtures of any type will be permitted.
- F. Mixing:

1. Measure materials by volume or equivalent weight.
2. Do not measure by shovel. Use known measure.
3. Mix ingredients in clean mechanical batcher for 3-5 minutes.
4. Let mortar sit for 20 minutes prior to use to allow for initial shrinkage. Use mortar within 1 hours of initial mixing. Do not re-temper.

## 2.02 STONE INJECTION GROUTS

- A. Micro Injection Grout for cracks less than 3/16”
1. M31 by Jahn Restoration Mortars as distributed by Cathedral Stone® Products, Inc., 7266 Park Circle Drive, Hanover, MD 21076; tel. (410) 782-9150; fax. (410) 782-9155; website: [www.cathedralstone.com](http://www.cathedralstone.com) email: [info@cathedralstone.com](mailto:info@cathedralstone.com) or APPROVED EQUAL.
  2. M32 by Jahn Restoration Mortars as distributed by Cathedral Stone® Products, Inc., 7266 Park Circle Drive, Hanover, MD 21076; tel. (410) 782-9150; fax. (410) 782-9155; website: [www.cathedralstone.com](http://www.cathedralstone.com) email: [info@cathedralstone.com](mailto:info@cathedralstone.com) or APPROVED EQUAL.
- B. Macro Injection Grout for cracks less from 3/16” to 9/16”
1. M40 by Jahn Restoration Mortars as distributed by Cathedral Stone® Products, Inc., 7266 Park Circle Drive, Hanover, MD 21076; tel. (410) 782-9150; fax. (410) 782-9155; website: [www.cathedralstone.com](http://www.cathedralstone.com) email: [info@cathedralstone.com](mailto:info@cathedralstone.com) or APPROVED EQUAL.

## 2.03 ARCHITECTURAL CAST STONE

- A. Comply with ASTM 1364.
- B. Physical properties:
1. Compressive Strength – ASTM 1194: 6,500 psi minimum for products at 28 days.
  2. Absorption – ASTM C 1195: 6.0% maximum by the cold water method.
  3. Air Content – ASTM C 173 or C 231, for wet cast product shall be 4.0-8.0% for units exposed to freeze thaw environments. Air entrainment is not required for Vibrant Dry Tamp (VDT) products.

4. Freeze-thaw – ASTM C 1364: The CPWL shall be less than 5.0% after 300 cycles of freezing and thawing.
  5. Linear Drying Shrinkage – ASTM C 426: Test and report in accordance with ASTM C1364.
- C. Job site testing – One sample from production units may be selected at random from the field for each 500 cubic feet delivered to the job site:
1. Three field cut cube specimens from each of these samples shall have an average minimum compressive strength of not less than 85% with no single specimen testing less than 75% of design strength as allowed by ACI 318.
  2. Three field cut cube specimens from each of these samples shall have an average maximum cold-water absorption of 6.0%.
  3. Field specimens shall be tested in accordance with ASTM C 1194 and C 1195.
- D. Raw Materials:
1. Portland cement – Type I or Type III, white and/or grey, ASTM C 150.
  2. Coarse aggregates - Granite, quartz or limestone, ASTM C 33, except for gradation, and are optional for the Vibrant Dry Tamp (VDT) casting method.
  3. Fine aggregates - Manufactured or natural sands, ASTM C 33, except for gradation.
  4. Colors - Inorganic iron oxide pigments, ASTM C 979 except that carbon black pigments shall not be used.
  5. Admixtures - Comply with the following:
    - a. ASTM C 260 for air-entraining admixtures.
  6. ASTM C 494/C 495M Types A - G for water reducing, retarding, accelerating and high range admixtures.

7. Other admixtures: Integral water repellents and other chemicals, for which no ASTM Standard exists, shall be previously established as suitable for use in concrete by proven field performance or through laboratory testing.
  8. ASTM C 618 mineral admixtures of dark and variable colors shall not be used in surfaces intended to be exposed to view.
  9. ASTM C 989 granulated blast furnace slag may be used to improve physical properties. Tests are required to verify these features.
  10. Water – Potable
  11. Reinforcing bars:
    - a. ASTM A 615/A 615M: Grade 40 or 60 steel hot dipped galvanized.
    - b. Welded Wire Fabric: ASTM A 185 where applicable for wet cast units.
  12. Fiber reinforcement (optional): ASTM C 1116
  13. All anchors, dowels and other anchoring devices and shims shall be standard building stone anchors commercially available in a non-corrosive material such as zinc plated, galvanized steel, brass, or stainless steel Type 302 or 304.
- E. Color and Finish:
1. Match sample to existing Architectural Cast Stone.
  2. All surfaces intended to be exposed to view shall have a fine-grained texture similar to natural stone, with no air voids in excess of 1/32 in. and the density of such voids shall be less than 3 occurrences per any 1 in.<sup>2</sup> and not obvious under direct daylight illumination at a 5 ft distance.
  3. Units shall exhibit a texture approximately equal to the approved sample when viewed under direct daylight illumination at a 10 ft distance.
    - a. ASTM D 2244 permissible variation in color between units of comparable age subjected to similar weathering exposure.
      - 1). Total color difference – not greater than 6 units.
      - 2). Total hue difference – not greater than 2 units.

4. Minor chipping resulting from shipment and delivery shall not be grounds for rejection. Minor chips shall not be obvious under direct daylight illumination from a 20-ft distance.
5. The occurrence of crazing or efflorescence shall not constitute a cause for rejection.
6. Remove cement film, if required, from exposed surfaces prior to packaging for shipment.

F. Reinforcing:

1. Reinforce the units as required by the drawings and for safe handling and structural stress.
2. Minimum reinforcing shall be 0.25 percent of the cross section area.
3. Reinforcement shall be noncorrosive where faces exposed to weather are covered with less than 1.5 in. of concrete material. All reinforcement shall have minimum coverage of twice the diameter of the bars.
4. Units greater than 24 in. in one direction shall be reinforced in that direction. Units less than 24 in. in both their length and width dimension shall be non-reinforced unless otherwise specified.
5. Welded wire fabric reinforcing shall not be used in dry cast products.

G. Curing:

1. Cure units in a warm curing chamber approximately 100°F (37.8°C) at 95 percent relative humidity for approximately 12 hours, or cure in a 95 percent moist environment at a minimum 70°F for 16 hours after casting. Additional yard curing at 95 percent relative humidity shall be 350 degree-days (i.e. 7 days @ 50°F or 5 days @ 70°F) prior to shipping. Form cured units shall be protected from moisture evaporation with curing blankets or curing compounds after casting.

H. Manufacturing Tolerances:

1. Cross section dimensions shall not deviate by more than  $\pm 1/8$  in. from approved dimensions.

2. Length of units shall not deviate by more than length/ 360 or  $\pm 1/8$  in., whichever is greater, not to exceed  $\pm 1/4$  in.
3. Maximum length of any unit shall not exceed 15 times the average thickness of such unit unless otherwise agreed by the manufacturer.
4. Warp, bow or twist of units shall not exceed length/ 360 or  $\pm 1/8$  in., whichever is greater.
5. Location of dowel holes, anchor slots, flashing grooves, false joints and similar features – On formed sides of unit,  $1/8$  in., on unformed sides of unit,  $3/8$  in. maximum deviation.

I. Production Quality Control:

1. Testing.
  - a. Test compressive strength and absorption from specimens taken from every 500 cubic feet of product produced.
  - b. Perform tests in accordance ASTM C 1194 and C 1195.
  - c. Have tests performed by an independent testing laboratory every six months.
  - d. New and existing mix designs shall be tested for strength and absorption compliance prior to producing units.
  - e. Retain copies of all test reports for a minimum of two years.

J. Delivery, Storage and Handling:

1. Mark production units with the identification marks as shown on the shop drawings.
2. Package units and protect them from staining or damage during shipping and storage.
3. Provide an itemized list of product to support the bill of lading.

2.02 STONE MASONRY PATCHING

A. Stone Patching

1. Single-component, pre-mixed cementitious mineral based mortar that is vapor permeable and replicates the physical properties of the existing stone. Patching material shall not contain any latex, or other synthetic polymer additives.
2. Product: M70 by Jahn Restoration Mortars as distributed by Cathedral Stone® Products, Inc., 7266 Park Circle Drive, Hanover, MD 21076; tel. (410) 782-9150; fax. (410) 782-9155; website: www.cathedralstone.com email: info@cathedralstone.com.

## 2.04 CLEANING AGENTS

- A. Light Duty Restoration Cleaner: Detergent, solvent cleaner, non-acid solution type: as manufactured by Prosoco, Sure Klean, or equal.
- B. Heavy Duty Restoration Cleaner: Detergent, solvent cleaner, non-acid solution type: as manufactured by Prosoco, Sure Klean, or equal.

## PART 3 – EXECUTION

### 3.01 MORTAR APPLICATION

- A. Rake out all stone joints in designated areas by hand using a chisel no wider than 3/4 (three fourths) joint width. Remove all unrequired metal fasteners from stone joints.
- B. Clean all mortar from surfaces within the joint or crack so that the new pointing mortar bonds to the building material, not old mortar. Do not chip or spall edges of the stone. More than one chip per square yard will be unacceptable. If work is found unacceptable, all raking will cease without additional cost to the Owner until deficiencies in tools, workers or methodologies have been corrected to the Architect's satisfaction.
- C. Joint depth to be at least 3/4-inches or shown on drawings, but in all cases rake back to expose sound mortar.
- D. Brush, vacuum or flush joints to remove all dirt and loose debris.
- E. Reduce initial absorption of the stone by thoroughly wetting stone surface with clean water just prior to repointing. Do not allow water to pool on surface of the stone.

- F. Pack joints with mortar leaving no voids. Place mortar in layers not exceeding 1/4 inch in depth. Apply succeeding layers only after preceding layer has taken initial set.
- G. Use clean tools and equipment free from hardened or partially set mortar.
- H. Clean excess mortar from stone and joints, removing splashed mortar and droppings immediately
- I. Do not retemper or use mortar which has partially set, is caked, or is lumpy.
- J. Tool horizontal and vertical face joints flush, dense and smooth after mortar has taken initial set. Do not allow mortar to extend over the stone surface.
- K. Curing: Keep joints damp (90% RH) for at least 72 hours or until surface is cured. Protect joints from rapid drying due to wind (i.e., covering tarps, enclosure on scaffolding).
- L Adjusting/Cleaning of Mortar Joints
  - 1. At the time of pointing of the stone, immediately remove mortar, grout and sealant from the face of the masonry.
  - 2. Use only tools and equipment which are clean and free of hardened or partially hardened material.
  - 3. Clean stone only with fiber bristle brushes and water. Use no acids, detergents, or other cleaning agents.

### 3.02 CRACK INJECTION

- A. Workmanship:
  - 1. All areas involved in the work shall be inspected by the Contractor to establish extent of work, access, and need for protection of surrounding construction, landscaping, etc. If conditions are not as expected, notify the Architect/Engineer immediately for direction. Do not proceed with work until unsatisfactory conditions are corrected.
  - 2. Grout workmanship should comply with all applicable recommendations of the Manufacturer's written specifications and requirements.
  - 3. Do not add any bonding agents, accelerators, or retarders to the grout.



4. Discard all grout that has hardened or exceeded its allowable pot life after mixing. Provide separate, clearly labeled containers for discarded grout and remove material from the staging area as soon as practical.

B. Preparation:

1. Transverse Cracks: For cracks across the face of the masonry unit, drill a series of injection ports in the center of the crack. These ports should be drilled in a downward direction. Between the ports, the crack should be sealed with removable, non-staining clay or repaired with the appropriate Jahn Mortar.
2. Lateral Cracks (Delaminating Layers) or Voids: Drill a series of injection ports in a square configuration (90° angles) on the face of the substrate to create a “drill frame”. Ports should be drilled in a downward direction.
3. Wash the surface and interior of the crack using clean water to remove all dust, or loose and deleterious material, which could prevent proper flow and/or adhesion, compromising the integrity of the cured injection grout.

C. Mixing:

1. It is recommended that safety goggles, gloves, and a dust mask be worn for protection. Do not mix more material than can be used within approximately 30 minutes. Discard any mixed material that has been unused for 30 minutes or more.
2. Jahn M31/M32:
  - a. The mixing ratio is approximately 2 to 5 parts powder to 1 part water by volume.
  - b. Mix mechanically using a high-speed drill (3,000 RPM or higher) equipped with a Jiffler type mixing paddle. After mixing, the mortar should be poured into another clean container using a sieve. Continued agitation is necessary if the mortar is allowed to sit prior to use.
3. Jahn M40:
  - a. The mixing ratio is approximately 2 – 2 1/2 parts powder to 1 part water by volume.

- b. Mix manually or mechanically, using a slow speed drill (400-600 RPM) equipped with a Jiffler type-mixing paddle. The material should be mixed for a minimum of three minutes, with continued agitation should the product be allowed to sit prior to use.

D. Injection Procedure:

1. Wash the interior of the crack immediately before injection by flushing with clean water. If the crack is allowed to dry out before grout is injected, this step must be repeated.
2. Treatment of Transverse Cracks: Inject grout into lowest port and continue until it flows freely from this port and other ports at the same level. Seal ports using non-staining clay, sealant, or caulk and proceed in identical fashion until the crack is filled. Clean up overflow immediately.
3. Treatment of Lateral Cracks (Delaminating Layers) or Voids: Inject grout into lower left port and proceed until it flows freely from this port and other ports at the same level. Where necessary, insert threaded stainless steel dowels after some grout has been injected, agitate or tap several times to remove any voids or air pockets, and inject the remainder of the grout until port is full and grout flows freely from other ports at the same level. Seal ports using non-staining clay, sealant, or caulk. Inject grout into lower right port and proceed in identical fashion. The order of injection is lower left, lower right, upper left, then upper right. Clean up overflow immediately.

E. Finishing:

1. Remove plugs after 24 to 48 hours and repair the ports and the crack surface, if not previously performed, using an appropriate Jahn Mortar to match color and type of existing masonry.

F. Clean Up:

1. Remove uncured mortar from substrate before it dries using clean water and a rubber sponge. Cured mortar may only be removed chemically or mechanically.
2. Remove uncured mortar from tools and equipment with water as soon as possible. Cured material may only be removed chemically or mechanically.

### 3.01 CAST STONE INSTALLATION

A. Examination:

1. Installing contractor shall check Cast Stone materials for fit and finish prior to installation. Do not set unacceptable units.

B. Setting Tolerances:

1. Comply with Cast Stone Institute® Technical Manual. Set stones 1/8 in. or less, within the plane of adjacent units. Joints, plus - 1/16 in., minus - 1/8 in.

C. Jointing:

1. Joint size:

- a. At stone/brick joints 3/8 in.
- b. At stone/stone joints in vertical position 1/4 in. (3/8 in. optional).
- c. Stone/stone joints exposed on top 3/8 in.

2. Joint Materials:

- a. Mortar, Type N, ASTM C 270.
- b. Use a full bed of mortar at all bed joints.
- c. Flush vertical joints full with mortar.
- d. Leave all joints with exposed tops or under relieving angles open for sealant.
- e. Leave head joints in copings and projecting components open for sealant.

3. Location of joints:

- a. As shown on shop drawings.
- b. At control and expansion joints unless otherwise shown.

D. Setting:

1. Wet units with clean water prior to setting.

2. Fill dowel holes and anchor slots completely with mortar or non-shrink grout.
  3. Set units in full bed of mortar, unless otherwise detailed.
  4. Rake mortar joints 3/4 in. in for pointing.
  5. Remove excess mortar from unit faces immediately after setting.
  6. Tuck point unit joints to a slight concave profile.
- E. Joint Protection:
1. Comply with requirements of Section 07 92 13.
  2. Prime ends of units, insert properly sized backing rod and install required sealant.
- F. Repair and Cleaning:
1. Repair chips with touchup materials furnished by manufacturer.
  2. Saturate units to be cleaned prior to applying an approved masonry cleaner.
  3. Consult with manufacturer for appropriate cleaners
- G. Inspection and Acceptance:
1. Inspect finished installation according to Cast Stone Institute® Technical Bulletin #36.
  2. Do not field apply water repellent until repair, cleaning, inspection and acceptance is completed.

END OF SECTION

**DIVISION 07**

**THERMAL AND MOISTURE PROTECTION**

**SECTION 07 92 13**

**SEALANTS AND CAULKING**

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include the General Conditions, Modifications to the General Conditions and applicable parts of Division 01 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.
- D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete, in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

- A. Provide all the Sealants and Caulking Work required to complete the Work of the contract including all the Sealants and Caulking Work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all hardware, finishes, and accessories. Coordinate the Sealants and Caulking Work with all the other trades for the project. Provide all demolition and disposal work to complete the Sealants and Caulking Work. Patch to match all adjacent surfaces that are disturbed, left exposed or unfinished. All work of the contract is related. It is the General Contractor's responsibility to review all the work of each section, each Subcontractor and each file sub-bidder for the entire project so that all the work can be properly and completely performed.
- B. Sealants and Caulking Work includes, but is not limited to:
  - 1. Silicone sealant for sealing the existing aluminum spandrel panels upon removal of the existing gaskets on the 1990's building.
    - a. Refer to Deduct Alternate No. 2.

2. Polyurethane sealant to be applied over repointed mortar for all granite stairs at 1890's Main Library Entrance.
3. Polyurethane sealant to be applied over repointed mortar for all Architectural Cast in Place Stone.
4. Any Dissimilar Material Joints
5. As shown on the drawings and where necessary to provide a water-tight installation.

#### 1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related Work are specified and included in other Sections of the Specifications:
  1. Section 02 41 00 – Selective Demolition
  2. 04 01 40 – Stone Masonry
  3. Section 04 72 00 – Architectural Cast Stone

#### 1.04 SUBMITTALS

- A. Product Literature: Submit product data sheets and the manufacturer's installation instructions.
- B. Sealant Samples:
  1. For all joints, provide custom samples to match existing mortar, stone, or architectural cast stone for color, as determined by the Architect.
    - a. Sample size: Minimum 2ft x 2ft, for each location.
    - b. Quantity of Samples: Unlimited until approved by Owner and Architect.

#### 1.05 PRODUCT HANDLING

- A. Delivery shall be in manufacturer's original unopened container, clearly identifying each product specified, relating it to the product literature submitted.

#### 1.06 GUARANTEES

- A. Sealant shall be guaranteed by the manufacturer against cohesive and adhesive failure of the sealant and water penetration through the joints for TWENTY (20) years.

## PART 2 – PRODUCTS

### 2.01 MATERIALS

- A. Urethane Sealant for Stone Granite and Concrete Stairs: Single-Component, Nonsag, Moisture-Cure, Polyurethane Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, shall be Tremco Dymonic 100 or APPROVED EQUAL.
- C. Primer: The primer shall be used in accordance with the manufacturer's instructions, with all primers being installed prior to the installation of any backer rod or bond breaker tape. Manufacturer shall be consulted for all surfaces not specifically covered in submittal application instructions. If stain type primer is used, apply material in a manner that will prevent exposed stain residue related to application procedures. Apply only with approval of the Architect.
- G. Backer Rod: Shall be closed cell polyethylene or polyurethane as recommended by the sealant manufacturer for compatibility with sealant.
- H. Bond Breaker Tape: Any acceptable polyethylene or similar type bond breaker tape shall be used to prevent three (3) sided adhesion in locations where backer rod cannot be used.
- I. Mason Sand: Broadcast sand over new applied sealant in existing stair joints.

## PART 3 – EXECUTION

### 3.01 JOINT SURFACE PREPARATION

- A. Remove all failed sealants and clean joint surfaces immediately before installation of sealant and caulking compounds. Remove dirt, insecure coatings, moisture and other substances which would interfere with the bond of sealant or caulking compounds.

### 3.02 INSTALLATION

- A. Where backer rod is required it shall be installed using only blunt instruments or rounded tools which will insure a uniform depth (+ or - 1/8") depth without puncturing the material. Backer rod shall be a minimum of 33% oversized for the joint to be sealed.
- B. Surrounding areas shall be protected to ensure that no sealant contaminates these surfaces.

- C. Sealant shall be installed in accordance with manufacturer's recommendations and instructions in order to insure proper width to depth ratio. Take all steps to prevent three (3) sided adhesion. Sealant depth shall be one half of joint width with a minimum depth of 1/4" and a maximum of 1/2" unless otherwise required by the manufacturer.
- D. Both temperature and dampness conditions may restrict application of these sealants. Comply with manufacturer's instructions.

END OF SECTION