

## Project Manual

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# MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE

Millbury Jr./Sr. High School  
12 Martin Street  
Millbury, Massachusetts 01527

Elmwood Street Elementary School  
40 Elmwood Street  
Millbury, Massachusetts 01527

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**November 1, 2023 - BID #0186-2402**

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Awarding Authority:

The **TOWN OF MILLBURY, MASSACHUSETTS**  
*acting by and through its*

**MILLBURY PUBLIC SCHOOLS**  
**OFFICE OF THE SUPERINTENDENT**  
12 Martin Street  
Millbury, Massachusetts 01527

Architect:

**DIXON SALO ARCHITECTS, INC.**  
300 Main Street, 1<sup>st</sup> Floor  
Worcester, Massachusetts 01608-1505

## PROJECT MANUAL

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PROJECT: MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE  
Millbury Memorial Junior/Senior High School  
12 Martin Street  
Millbury, Massachusetts 01527  
  
Elmwood Street Elementary School  
40 Elmwood Street  
Millbury, Massachusetts 01527

BID NO.: 0186-2402

AWARDING AUTHORITY /  
OWNER: MILLBURY PUBLIC SCHOOLS  
12 Martin Street  
Millbury, Massachusetts 01527  
Telephone: 508-865-9501  
  
Contact: Richard G. Bedard, Jr.  
Assistant Superintendent for Finance and Operations  
[rbedard@millburyschools.org](mailto:rbedard@millburyschools.org)

ARCHITECT: DIXON SALO ARCHITECTS, INC.  
300 Main Street, 1<sup>st</sup> Floor  
Worcester, Massachusetts 01608-1505  
  
Contact: Jesse Hilgenberg, President  
[jhilgenberg@dixonsaloarchitects.com](mailto:jhilgenberg@dixonsaloarchitects.com)

## ARCHITECT and ARCHITECT'S CONSULTANTS

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### ARCHITECTURE:

DIXON SALO ARCHITECTS, INC.  
300 Main Street, 1<sup>st</sup> Floor  
Worcester, Massachusetts 01608-1505  
Telephone: 508-755-0533

Contact: Jesse Hilgenberg, President  
[jhilgenberg@dixonsaloarchitects.com](mailto:jhilgenberg@dixonsaloarchitects.com)

### ELECTRICAL ENGINEERING:

SHEPHERD ENGINEERING, INC.  
1308 Grafton Street  
Worcester, Massachusetts 01604  
Telephone: 508-757-7793

Contact: John Shepherd, Principal  
[jshepherd@shepherdengineering.com](mailto:jshepherd@shepherdengineering.com)

### SPECIFICATIONS CONSULTANT:

PAUL DIBONA SPECIFICATIONS LLC  
108 Hayden Rowe Street  
Hopkinton, Massachusetts 01748-2508  
Telephone: 508-625-1098

Contact: Paul L. DiBona, President  
[paul@pdspecs.com](mailto:paul@pdspecs.com)

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- A.      The List of Drawings for MILLBURY PUBLIC SCHOOLS – MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE, Millbury Jr./Sr. High School, 12 Martin Street, Millbury, Massachusetts 01527 and Elmwood Street Elementary School, 40 Elmwood Street, Millbury, Massachusetts 01527; BID #0186-2402, is as follows:

<u>Drawing No.</u>	<u>Date of Issue</u>	<u>Rev. No.</u>	<u>Rev. Date</u>	<u>Drawing Title</u>
GENERAL (T - Series)				
T-1.0	11/01/23	-	-	TITLE SHEET
T-1.1	11/01/23	-	-	GENERAL NOTES & DETAILS & CARD READER INSTALL
ARCHITECTURAL (A - Series)				
A-0.1	11/01/23	-	-	LOCUS MAP - ELMWOOD SCHOOL
A-0.2	11/01/23	-	-	LOCUS MAP - JR. / SR. HIGH SCHOOL
A-0.3	11/01/23	-	-	PARTIAL EXISTING DRAWINGS - ELMWOOD SCHOOL
A-0.4	11/01/23	-	-	EXISTING DRAWINGS - JUNIOR HIGH
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A-1.1	11/01/23	-	-	REPLACEMENT DOOR HIGH SCHOOL HS-A2 REPLACEMENT DOOR HIGH SCHOOL HS-B3
A-1.2	11/01/23	-	-	REPLACEMENT DOOR HIGH SCHOOL HS-B1 REPLACEMENT DOOR HIGH SCHOOL HS-C1
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A-1.4	11/01/23	-	-	REPLACEMENT DOOR HIGH SCHOOL HS-D1 REPLACEMENT DOOR HIGH SCHOOL HS-D5
A-1.5	11/01/23	-	-	REPLACEMENT DOOR ELMWOOD STREET ELEMENTARY SCHOOL ES-C6 REPLACEMENT DOOR ELMWOOD STREET ELEMENTARY SCHOOL ES-C7

<u>Drawing No.</u>	<u>Date of Issue</u>	<u>Rev. No.</u>	<u>Rev. Date</u>	<u>Drawing Title</u>
ARCHITECTURAL (A - Series) (continued)				
A-1.6	11/01/23	-	-	REPLACEMENT DOOR ELMWOOD STREET ELEMENTARY SCHOOL ES-C8  REPLACEMENT DOOR ELMWOOD STREET ELEMENTARY SCHOOL ES-A2
A-1.7	11/01/23	-	-	REPLACEMENT DOOR ELMWOOD STREET ELEMENTARY SCHOOL ES-AA1  REPLACEMENT DOOR ELMWOOD STREET ELEMENTARY SCHOOL ES-AA2
A-2.1	11/01/23	-	-	SECURITY EQUIPMENT INSTALLATION HIGH SCHOOL DOOR HS-A1  SECURITY EQUIPMENT INSTALLATION HIGH SCHOOL DOOR HS-D4
A-2.2	11/01/23	-	-	SECURITY EQUIPMENT INSTALLATION HIGH SCHOOL DOOR HS-B6  SECURITY EQUIPMENT INSTALLATION JUNIOR HIGH SCHOOL DOOR JH-A1
A-2.3	11/01/23	-	-	SECURITY EQUIPMENT INSTALLATION JUNIOR HIGH SCHOOL DOOR JH-A2  SECURITY EQUIPMENT INSTALLATION JUNIOR HIGH SCHOOL DOOR JH-C1
A-2.4	11/01/23	-	-	SECURITY EQUIPMENT INSTALLATION JUNIOR HIGH SCHOOL DOOR JH-C2  SECURITY EQUIPMENT INSTALLATION ELMWOOD STREET ELEMENTARY SCHOOL DOOR ES-A1
A-2.5	11/01/23	-	-	SECURITY EQUIPMENT INSTALLATION ELMWOOD STREET ELEMENTARY SCHOOL DOOR ES-A3  SECURITY EQUIPMENT INSTALLATION ELMWOOD STREET ELEMENTARY SCHOOL DOOR ES-C3
ELECTRICAL (E – Series)				
E-1.1	11/01/23	-	-	REPLACEMENT DOORS - POWER



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- ADD ALTERNATE #1 - SECURITY EQUIPMENT INSTALLATION - DOOR HS-B6
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- ADD ALTERNATE #3 - SECURITY EQUIPMENT INSTALLATION - DOOR JH-C2
- ADD ALTERNATE #4 - SECURITY EQUIPMENT INSTALLATION - DOOR ES-A3
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Not Used.

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Not Used.

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**SECTION I**  
**INVITATION FOR BIDS**

## SECTION I - INVITATION FOR BIDS

### MILLBURY PUBLIC SCHOOLS - BID #0186-2402

#### INVITATION FOR BIDS

#### MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE

**Millbury Jr./Sr. High School, 12 Martin Street, Millbury, Massachusetts 01527**  
**Elmwood Street Elementary School, 40 Elmwood Street, Millbury, Massachusetts 01527**

The MILLBURY PUBLIC SCHOOLS is accepting bids for MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE, Millbury Jr./Sr. High School, 12 Martin Street, Millbury, Massachusetts 01527 and Elmwood Street Elementary School, 40 Elmwood Street, Millbury, Massachusetts 01527; Bid #0186-2402.

Work of this Contract includes replacement of exterior doors at Millbury Jr./Sr. High School and at Elmwood Street Elementary School including security upgrades at these locations including removal and disposal of existing doors and hardware, new metal doors and frames including glazing, new door hardware and all electrical work associated with door controls and security, painting, and appurtenant work as per the Contract Documents.

1. Work shall be a lump sum contract under MGL Chapter 149 with General Bid and Filed Sub-bids listed below.
2. Work shall include required Filed Sub-bids for the following trades: Painting and Electrical.
3. Contractor's / Subcontractor's Licenses/Certification: The Contractor and Subcontractors shall possess all necessary licenses and certifications to complete the work.
  - a. General Bidder shall be DCAMM certified as a 'Prime Contractor' or a 'Small Prime Contractor' in the following category: 'General Building Construction'.
  - b. Filed Sub-bidders shall be DCAMM certified for the stipulated trade: 'Painting' and 'Electrical Work'.
4. Date and Times for Receipt of Bids:
  - a. All **General Bids are due by Tuesday, November 28, 2023 at 2:00 P.M.** in the Superintendent's Office, 12 Martin Street, Millbury, Massachusetts 01527.
  - b. All **Filed Sub-bids are due by Tuesday, November 21, 2023 at 2:00 P.M.** in the Superintendent's Office, 12 Martin Street, Millbury, Massachusetts 01527.
5. Pre-Bid Conference:
  - a. There is a pre-bid conference scheduled for **Tuesday, November 14, 2023 at 3:00 P.M.** at Millbury Jr./Sr. High School, 12 Martin Street, Millbury, Massachusetts 01527. Telephone number 508-865-9501.

Copies of the bid documents may be obtained from Millbury Public Schools, Superintendent's Office, c/o Richard G. Bedard, Jr., Assistant Superintendent for Finance and Operations. 12 Martin Street, Millbury, Massachusetts 01527 during regular business hours of Monday through Friday 8:00 A.M. to 3:00 P.M.

Work under this contract requires a Contractor to furnish all labor, materials, tools, equipment, and supervision necessary to accomplish the work described herein, accordance with all specifications and requirements.

All bids are subject to the provisions of M.G.L. Chapter 149. Wages are subject to minimum wage rates determined by the Massachusetts Dept. of Labor and Industries pursuant to M.G.L. Chapter 149, Section 26 and 27.

END OF DOCUMENT

**SECTION II**  
**SCOPE OF SERVICES**

## **SECTION II – SCOPE OF SERVICES**

The Contractor agrees to perform the following services to Millbury School Door Replacement & Security Upgrade with work required at Millbury Jr./Sr. High School and Elmwood Street Elementary School.

All prospective bidders are required to visit the sites to inspect the work.

The project shall be completed within seventy-five (75) calendar days from the execution of a signed contract.

### **GENERAL SPECIFICATIONS**

- All work shall be completed in a manner that will minimize disruption to school related activities and personnel.
- Secure work areas.
- Contractor responsible for all Federal, State and Local permits.
- All work to comply with Massachusetts State Building Code.
- All work to comply with industry standards.
- Clean up and remove all debris from site as needed daily and at the end of the project.
- Prevailing wages apply, rate sheet included.

### **WORK SPECIFICATIONS**

- Door replacement and security upgrade work at Millbury Jr./Sr. High School and Elmwood Street Elementary School to the extent shown on the Contract Drawings.
- Remove and dispose of all waste and debris from the work site.

It is the intent of these specifications to describe the door replacement and security upgrade work at Millbury Jr./Sr. High School and Elmwood Street Elementary School to the extent shown on the Contract Drawings.

The work under this contract is to include the furnishing of all labor, materials necessary to complete this process. All contracts are awarded with the understanding that the contractor has acquainted himself with all the requirements of the contracts and specifications, the conditions of the site, and has obtained all the information necessary for the completion of this project. The Contractor shall not at any time, after the submission of his bid, make any claim whatsoever based on insufficient data or a misunderstanding of the requirements, nature, conditions or extent of the work under the contract.

END OF DOCUMENT

**SECTION III**  
**INFORMATION / INSTRUCTIONS TO BIDDERS**

### SECTION III - INFORMATION / INSTRUCTIONS TO BIDDERS

Purchasing Entity: Millbury Public Schools  
Superintendent's Office  
12 Martin Street  
Millbury, MA 01527

Telephone: 508-865-9501

Fax: 508-865-0888

Bid Number: 0186-2402

Contact Person(s) Richard G. Bedard, Jr., Assistant Superintendent for Finance and Operations

#### INSTRUCTIONS FOR SUBMISSION OF BIDS:

1. Bids [General Bids and Filed Sub-bids (Painting and Electrical)] are to be submitted in a sealed envelope, clearly marked with **Bid No. 0186-2402** and **"MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE"** – Millbury Memorial Junior/Senior High School, 12 Martin Street, Millbury, Massachusetts 01527 and Elmwood Street Elementary School, 40 Elmwood Street, Millbury, Massachusetts 01527.

Bids must be mailed or delivered to:

Millbury Public Schools  
Superintendent's Office  
12 Martin Street  
Millbury, MA 01527

An original plus one (1) copy of the bid are to be submitted. No facsimile copies of the bid will be accepted. Bids received after deadline will be returned unopened.

2. Bids must include the BID FORM and the following completed attachments, which are included in Section VI - BID FORMS AND ATTACHMENTS.
  - a. Certificate (Affidavit) of Non-Collusion
  - b. Tax Compliance Certification
  - c. Certificate of Authority (if a Corporation)
  - d. Statement of Qualifications/References
  - e. OSHA-10 Certification (Chapter 306)
  - f. Site Visit Confirmation Sheet

END OF DOCUMENT

**SECTION IV**  
**GENERAL SPECIFICATIONS**



#### SECTION IV – GENERAL SPECIFICATIONS

A. Description

Work shall be performed in accordance with approved construction methods as specified in the Massachusetts Building Code, Massachusetts Electrical Code, and the Contract Documents dated November 1, 2023.

B. Insurance Requirements

The Contractor shall evidence the ability to insure the Millbury Public Schools against general, automobile, and workers' compensation liabilities. Contractors must meet the minimum insurance limits outlined below. The Contractor shall provide proof of insurance naming the Millbury Public Schools as an additional insured for the project.

General Liability	\$1,000,000 per occurrence; \$3,000,000 aggregate
Automobile Liability	\$1,000,000 Combined Single Limit (C.S.L.)
Workers' Compensation	Per statutory limits
Excess Liability Umbrella	\$1,000,000 C.S.L.

C. Contractor's Indemnification

Contractor shall, to the maximum extent permitted by law, indemnify and save harmless the Millbury Public Schools, its officers, agents and employees from and against any and all damages, liabilities, action, suits, proceedings, claims, demands, losses, costs and expenses (including reasonable attorney's fees) that may arise out of or in connection with the work being performed or to be performed by the Contractor, his employees, agents, subcontractors or materialmen. The existence of insurance shall in no way limit the scope of this indemnification. The Contractor further agrees to reimburse the Millbury Public Schools for damage to its property cause by the Contractor, his employees agents, subcontractors or materialmen, including damages caused by his, its or their use of faulty, defective or unsuitable material or equipment, unless the damage is cause by the Millbury Public Schools' gross negligence or willful misconduct.

D. Contractor's /Subcontractor's Licenses/Certification

The Contractor and Subcointractors shall possess all necessary licenses and certifications to complete the work.

General Bidder shall be DCAMM certified as a 'Prime Contractor' or a 'Small Prime Contractor' in the following category: 'General Building Construction'.

Fild Sub-bidders shall be DCAMM certified for the stipulated trade: 'Painting' and 'Electrical Work'.

E. Inspection of Job Site

Bidders must visit the sites and take such other steps as may be necessary to ascertain the nature and location of the work and the general location conditions which can affect the work or the cost thereof. Failure to do so will result in automatic bid rejection.

A Pre-Bid Conference (optional) is scheduled for 3:00 PM on Tuesday, November 14, 2023.

All potential bidders may visit the sites during the pre-bid conference or schedule time with the MPS Assistant Superintendent for Finance and Operations.

F.      Payment Bond

A Payment Bond in the amount of one hundred percent (100%) of the total cost of the project, issued by a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and satisfactory to the Awarding Authority, must be furnished within ten (10) days of Notice of Award of Contract.

G.      Performance Bond

A Performance Bond in the amount of one hundred percent (100%) of the total cost of the project, issued by a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and satisfactory to the Awarding Authority, must be furnished within ten (10) days of Notice of Award of Contract.

H.      Bid Bond

A Bid Bond in the amount of five percent (5%) is required shall be submitted with bid. The bid bond is considered five percent (5%) of the Contract Price.

I.      Construction Period Milestones

The proposed schedule for Construction of MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE; Contract (Bid No. 0186-2402) is as follows:

- Award of Contract: On or about December 15 2023.
- Construction Period – 75 calendar days from Notice to Proceed.

END OF DOCUMENT

**SECTION V**  
**AWARDING OF CONTRACT**

## **SECTION V - AWARDING OF CONTRACT**

The Millbury Public Schools intends to award this Contract to the lowest eligible responsible and eligible bidder.

The Superintendent shall consider the following criteria in making that determination.

- Price.
- Budget. The budget for this project is \$350,000 to \$400,000.
- Compliance with requirements of this Invitation for Bids (IFB) and applicable laws.
- Ability of Bidder to undertake and complete the work of this contract in a timely fashion in strict compliance with Owner's schedule.
- General Contractor's and Filed Subcontractors' qualifications including DCAMM Certification.

The Contract will be awarded no later than thirty (30) days after bid opening, during which period bids may not be withdrawn.

END OF DOCUMENT

## **SECTION VI**

### **BID FORMS AND ATTACHMENTS**

#### **BID FORMS**

- FORM FOR GENERAL BID
- FORM FOR SUB-BID

#### **ATTACHMENTS:**

- CERTIFICATE (AFFIDAVIT) OF NON-COLLUSION
- TAX COMPLIANCE CERTIFICATION
- CERTIFICATE OF AUTHORITY (IF A CORPORATION)
- STATEMENT OF QUALIFICATIONS / REFERENCES
- OSHA-10 CERTIFICATION (CHAPTER 306 OF THE ACTS OF 2004)
- SITE VISIT CONFIRMATION SHEET

**MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE**

**BID NO. 0186-2402**

**FORM FOR GENERAL BID**

TO:      **MILLBURY PUBLIC SCHOOLS** (hereinafter called "Awarding Authority" or "Owner")  
            c/o SUPERINTENDENT'S OFFICE  
            12 Martin Street  
            Millbury, Massachusetts 01527

Attn: **Richard G. Bedard, Jr., Assistant Superintendent for Finances and Operations**

- A.      The Undersigned (hereinafter referred as "Bidder"), proposes to furnish all labor and materials required for construction of:

**MILLBURY PUBLIC SCHOOLS**

**MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE**

**BID NO. 0186-2402**

Millbury Jr./Sr. High School  
12 Martin Street  
Millbury, Massachusetts 01527

Elmwood Street Elementary School  
40 Elmwood Street  
Millbury, Massachusetts 01527

in accordance with the accompanying Bidding and Contract Documents (Plans and Specifications) prepared by the Architect, DIXON SALO ARCHITECTS, INC. for the Base Bid Contract Price specified below, subject to additions and deductions according to the terms of the specifications.

- B.      ADDENDA: This Bid includes Addenda numbered \_\_\_\_\_

- C.      BASE BID CONTRACT PRICE: The proposed Base Bid Contract Price is \_\_\_\_\_

Dollars (\$ \_\_\_\_\_ ).

ADD ALTERNATES (refer to Section 01030, ALTERNATES):

For Alternate No. 1      Add      \$ \_\_\_\_\_      Subtract \$ \_\_\_\_\_

For Alternate No. 2      Add      \$ \_\_\_\_\_      Subtract \$ \_\_\_\_\_

For Alternate No. 3      Add      \$ \_\_\_\_\_      Subtract \$ \_\_\_\_\_

For Alternate No. 4      Add      \$ \_\_\_\_\_      Subtract \$ \_\_\_\_\_

For Alternate No. 5      Add      \$ \_\_\_\_\_      Subtract \$ \_\_\_\_\_

For Alternate No. 6      Add      \$ \_\_\_\_\_      Subtract \$ \_\_\_\_\_

E.      SUBDIVISION OF CONTRACT PRICE: The subdivision of the proposed Contract Price is as follows:

1.      ITEM NO. 1: The work of the General Contractor, being all work other than that covered under

Item No. 2: \_\_\_\_\_.

2.      ITEM NO. 2 - SUB-BIDS AS FOLLOWS:

<u>Sub Trade / Section No.</u>	<u>Name of Sub-Bidder</u>	<u>Amount</u>	<u>Undersigned Requires Performance Bond/ Payment Bond</u>
PAINTING Section 09901, PAINTING	_____	_____	_____
ELECTRICAL WORK Section 16101, ELECTRICAL	_____	_____	_____

TOTAL OF ITEM NO. 2: \$ \_\_\_\_\_

F.      SUB-BIDS: The undersigned agrees that each of the above-named Sub-bidders will be used for the work indicated at the amount stated, unless a substitution is made. The undersigned further agrees to pay the premiums for the Performance Bond and Payment Bond furnished by Sub-bidders as requested herein and that all of the cost of all such premiums is included in the amount set forth in Item No. 1 of this Bid.

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

G.      COMMENCEMENT OF WORK, AND DATES FOR SUBSTANTIAL AND FINAL COMPLETION:

1.      Commencement of Work: The Bidder hereby agrees to commence work under this Contract on or before a date to be specified in written "Notice to Proceed" issued by the Owner, and to thereafter diligently and continuously carry on the Work in accordance with the following:

- Award of Contract: On or after December 15, 2023.
  - Start of Construction On-Site: Per Owner's Notice to Proceed.
  - Construction Period: 75 calendar days from Notice to Proceed.
- H. Liquidated Damages: (Not Applicable).
- I. The undersigned agrees that, if he is selected as General Contractor, he will within five days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the awarding authority, execute a contract in accordance with the terms of this Bid and furnish a performance bond and also a labor and materials or payment bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority and each in the sum of the Contract Price, the premiums for which are to be paid by the General Contractor and are included in the Contract Price.
- J. The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work and that he will comply fully with all laws and regulations applicable to awards made subject to section forty-four A.
- K. The undersigned bidder hereby certifies, under the pains and penalties of perjury, that the foregoing bid is based upon the payment to laborers to be employed on the project of wages in an amount no less than the applicable prevailing wage rates established for the project by the Massachusetts Department of Labor and Workforce Development, Division of Occupational Safety. The undersigned bidder 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 of (1) the failure of the said bid to be based upon the payment of the said applicable prevailing wage rates or (2) the failure of the bidder, if selected as the contractor, to pay laborers employed on the project the said applicable prevailing wage rates.
- L. The undersigned further certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the Commonwealth of Massachusetts General Laws or any rule or regulations promulgated thereunder.
- M. The undersigned further certifies that all employees to be employed at the work site have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least ten (10) hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that he will comply fully with all laws and regulations applicable to award of contracts subject to MGL Section 44F.
- N. Attached to this BID FORM are the following:
- Certificate (Affidavit) of Non-Collusion
  - Tax Compliance Certification
  - Certificate of Authority (if a Corporation)
  - Statement of Qualifications / References
  - OSHA - 10 Certification (Chapter 306 of the Acts of 2004)



- O.      Pursuant to M.G.L. CH. 62C, Sec 49A, I certify under the penalties of perjury that I have filed all state tax returns and paid all State Taxes required under law.

Date: \_\_\_\_\_

By: \_\_\_\_\_  
(Signature)

(SEAL - if bid is by a corporation)

\_\_\_\_\_  
(Name of Bidder)

\_\_\_\_\_  
(Title)

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

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

\_\_\_\_\_  
(Telephone No. and Fax No.)

END OF FORM FOR GENERAL BID

**MILLBURY PUBLIC SCHOOLS**  
**MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE**  
**BID NO. 0186-2402**

**FORM FOR SUB-BID**

To all General Bidders Except Those Excluded:

- A.     The undersigned proposes to furnish all labor and materials required for completion in accordance with the Contract Documents dated \_\_\_\_\_, together with all Addenda issued and received prior to closing time for receipt of Bids, of all the work specified in Section(s) \_\_\_\_\_ of the Specifications and in any Drawings specified in these Sections, prepared by:

**DIXON SALO ARCHITECTS, INC.**  
300 Main Street, 1<sup>st</sup> Floor  
Worcester, Massachusetts 01608-1505

for construction of:

**MILLBURY PUBLIC SCHOOLS**  
**MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE**  
**BID NO. 0186-2402**

Millbury Jr./Sr. High School  
12 Martin Street  
Millbury, Massachusetts 01527

Elmwood Street Elementary School  
40 Elmwood Street  
Millbury, Massachusetts 01527

for the Contract Sum of: \_\_\_\_\_

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_ )

- B.     ADD ALTERNATES (refer to Section 01030, ALTERNATES):

For Alternate No. 1      Add      \$ \_\_\_\_\_      Subtract \$ \_\_\_\_\_

For Alternate No. 2      Add      \$ \_\_\_\_\_      Subtract \$ \_\_\_\_\_

For Alternate No. 3      Add      \$ \_\_\_\_\_      Subtract \$ \_\_\_\_\_

For Alternate No. 4      Add      \$ \_\_\_\_\_      Subtract \$ \_\_\_\_\_

For Alternate No. 5      Add      \$ \_\_\_\_\_      Subtract \$ \_\_\_\_\_

For Alternate No. 6      Add      \$ \_\_\_\_\_      Subtract \$ \_\_\_\_\_

C. This sub-bid includes the following addenda:

Addendum No. \_\_, \_\_, \_\_, \_\_, \_\_, \_\_, \_\_.

D. This Sub-bid:

[ ] may be used by any General Bidder except: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

[ ] may only be used by the following General Bidders: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

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

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

<u>Name</u>	<u>Class of Work</u>	<u>Bid Price</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

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

G. The undersigned agrees that the above list of bids to the undersigned represents bona fide bids based on the hereinbefore described Drawings, Specifications, and Addenda and that, if the undersigned is awarded the Contract, they will be used for the work indicated at the amounts stated, if satisfactory to the Awarding Authority.

H. The undersigned further agrees to be bound to the General Contractor by the terms of the hereinbefore described Drawings, Specifications (including all General Conditions and Supplemental Conditions stated therein), and Addenda, and to assume toward him/her all the obligations and responsibilities that he/she, by those documents, assumes toward the Awarding Authority.

I. The undersigned offers the following information as evidence of his/her qualifications to perform the work as bid 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 one or more recent buildings with names of General Contractor and Architect on which you served as subcontractor for work of similar character as required for the above-named building.

<u>Building</u>	<u>Architect</u>	<u>General Contractor</u>	<u>Amount of Contract</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

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

J. The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work and that he/she will comply fully with all laws and regulations applicable to awards of subcontracts subject to Section 44F.

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

L. 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 Massachusetts General Laws or any rule or regulation promulgated thereunder.

Date: \_\_\_\_\_ (Name of Sub-bidder)

By: \_\_\_\_\_ (Name and Title of Person Signing Bid)

(Seal)

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

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

\_\_\_\_\_  
 (Telephone)

END OF FORM FOR SUB-BID

**CERTIFICATE (AFFIDAVIT) OF NON-COLLUSION**

The undersigned certifies under penalty of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word “person” shall mean any natural person, business, partnership, corporation, union, committee, club or other organization, entity, or group of individuals.

\_\_\_\_\_  
Signature of individual submitting bid or proposal

\_\_\_\_\_  
Name of Business

END OF DOCUMENT

**TAX COMPLIANCE CERTIFICATION**

Pursuant to M.G.L. c 62C, Sec. 49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

\_\_\_\_\_  
Signature of person submitting bid or proposal

\_\_\_\_\_  
Name of Business

\_\_\_\_\_  
Date

END OF DOCUMENT

**CERTIFICATE OF AUTHORITY  
(IF A CORPORATION)**

At a duly authorized meeting of the Board of Directors of the \_\_\_\_\_  
(name of corporation)

\_\_\_\_\_, held on \_\_\_\_\_ at which all the Directors  
(date)

were present or waived notice, it was voted that \_\_\_\_\_, of the  
(officer and title)  
the company be and is hereby authorized to execute contracts and bonds in the name and on behalf of said company,  
and affix its Corporate Seal thereto, and such execution of any contract of obligation in this company's name on its  
behalf of such \_\_\_\_\_ under the seal of the company, shall be valid and  
(officer)  
binding upon this company.

A TRUE COPY,

Attest: \_\_\_\_\_

Place of Business: \_\_\_\_\_

I hereby certify that I am the (title) \_\_\_\_\_ of the  
(name of corporation) \_\_\_\_\_ and that  
(name of officer) \_\_\_\_\_ is the duly elected  
(title) \_\_\_\_\_ of said company, and the above vote has not been  
amended or rescinded and remains in full force and effect as of the date of this contract.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name/Title: \_\_\_\_\_

COMMONWEALTH OF MASSACHUSETTS  
Worcester County, S. S.

(Corporate Seal)

On this \_\_\_\_\_ day of \_\_\_\_\_, of the year  
\_\_\_\_\_, then personally appeared the above-named  
\_\_\_\_\_, and acknowledged the foregoing instrument to be  
his/her free act and deed before me.

Notary Public \_\_\_\_\_

My commission expires: \_\_\_\_\_

END OF DOCUMENT

**MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE**

**BID NO. 0186-2402**

**STATEMENT OF QUALIFICATIONS AND REFERENCES**

All questions must be answered, and the data given must be clear and comprehensive. Please type or print legibly. Add additional sheets, if necessary. The information will be utilized by the Millbury Public Schools for purposes of determining bidder responsiveness and responsibility with regard to the requirement and specifications of the Contract.

Company Name: \_\_\_\_\_

When Organized: \_\_\_\_\_

Incorporated? (Yes or No): \_\_\_\_\_

If incorporated, date and state of incorporation: \_\_\_\_\_

Have you ever failed to complete a contract awarded to you? (Yes or No): \_\_\_\_\_

If yes, where and why?

---

---

---

Have you ever defaulted on a contract? (Yes or No): \_\_\_\_\_

If yes, provide details?

---

---

---

Primary Foreman for this project? \_\_\_\_\_

Number of years the Primary Foreman has been doing similar work: \_\_\_\_\_

Number of years the Primary Foreman has held licenses: \_\_\_\_\_



**OSHA-10 CERTIFICATION**  
**(CHAPTER 306 OF THE ACTS OF 2004)**

Chapter 30: Section 39S. Contracts for construction; requirements

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

Any employee found on a worksite subject to this section without documentation of successful completion of a course in safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration shall be subject to immediate removal.

Date: \_\_\_\_\_

Company Name: \_\_\_\_\_

Company Address: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

Print Name & Title: \_\_\_\_\_

END OF DOCUMENT

**MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE**

**Millbury Jr./Sr. High School  
12 Martin Street  
Millbury, Massachusetts 01527**

**Elmwood Street Elementary School  
40 Elmwood Street  
Millbury, Massachusetts 01527**

**BID NO. 0186-2402**

**SITE VISIT CONFIRMATION SHEET**

I certify that I have visited the site listed below:

Company Name: \_\_\_\_\_

Company Representative Signature: \_\_\_\_\_

Millbury Public Schools Certification:

The individual listed above has visited the location as specified.

**Millbury School Door Replacement & Security Upgrade Site Visit**

\_\_\_\_\_  
Millbury Public Schools Representative Signature  
or MPS Architect/Engineer's Signature

\_\_\_\_\_  
Date

END OF DOCUMENT

**SECTION VII**  
**SAMPLE CONTRACT**

MILLBURY PUBLIC SCHOOLS  
BID #0186-2402

MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE  
Millbury Jr./Sr. High School, 12 Martin Street, Millbury, Massachusetts 01527  
Elmwood Street Elementary School, 40 Elmwood Street, Millbury, Massachusetts 01527

**SAMPLE**

## **CONTRACT**

### **MILLBURY PUBLIC SCHOOLS**

**Bid Number: 0186-2402**

### **MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE**

**Millbury Jr./Sr. High School  
12 Martin Street  
Millbury, Massachusetts 01527**

**Elmwood Street Elementary School  
40 Elmwood Street  
Millbury, Massachusetts 01527**

This Contract is executed this \_\_\_\_\_ day of \_\_\_\_\_ by and between:

\_\_\_\_\_) hereinafter referred to as the ‘Contractor’ and the  
Millbury Public Schools, c/o Millbury Public Schools, a municipal corporation duly organized under the laws of the  
Commonwealth of Massachusetts, with a principal place of business at 12 Martin Street, Millbury, MA 01527,  
hereinafter referred to as the “School.”

The School and the Contractor agree to the terms and conditions contained in this Contract. The Contractor agrees to  
perform the following services at the price indicated in its proposal dated \_\_\_\_\_

### **MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE**

#### **CONTRACTOR SERVICES, LICENSES AND PERMITS**

The Contractor shall furnish all labor, materials and equipment to complete the MILLBURY SCHOOL – DOOR  
REPLACEMENT & SECURITY UPGRADE Project as prescribed in the Scope of Services attached to this Contract.  
The Contractor shall conform to applicable federal, state, and local laws, regulations and building codes. The  
Contractor shall obtain municipal building permits required to complete the project.

#### **PREVAILING WAGES**

This contract is subject to the Commonwealth’s Prevailing Wage Law. Attached is the Massachusetts Division of  
Occupational Safety Prevailing Wage Rate schedule covering this project.

#### **PAYMENT TERMS**

The Contractor shall provide the services for the price submitted on their proposal dated \_\_\_\_\_, unless otherwise  
mutually agreed in writing. The School shall not loan or advance any funds to the Contractor for any purposes.

#### INSURANCE REQUIREMENTS

The Contractor shall secure and maintain for the duration of this project and at no cost to the School, with respect to the services related to this Contract, insurance coverages as stipulated in Section III. B. of the Bid Specifications. The Contractor shall be required to provide proof of insurance naming the Millbury Public Schools as an additional insured for the project. The Certificate Holder shall be identified as the "Superintendent", 12 Martin Street, Millbury, Massachusetts 01527.

#### PAYMENT BOND

A Payment Bond in the amount of one hundred percent (100%) of the total cost of the project, issued by a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and satisfactory to the Awarding Authority, must be furnished within ten (10) days of notice of award of contract.

#### PERFORMANCE BOND

A Performance Bond in the amount of one hundred percent (100%) of the total cost of the project, issued by a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and satisfactory to the Awarding Authority, must be furnished within ten (10) days of notice of award of contract.

#### CONTRACTOR'S INDEMNIFICATION

The Contractor shall, to the maximum extent permitted by law, indemnify and save harmless the Millbury Public Schools, its officers, agents and employees from and against any and all damages, liabilities, actions, suits, proceedings, claims, demands, losses, costs and expenses (including reasonable attorney's fees) that arise out of or in connection with the work being performed or to be performed by the Contractor, his employees, agents, subcontractors or materialmen. The existence of insurance shall in no way limit the scope of this indemnification. The Contractor further agrees to reimburse the Millbury Public Schools for damage to its property caused by the Contractor, his employees, agents, subcontractors or materialmen, including damages caused by his, its or their use of faulty, defective or unsuitable material or equipment, unless the damage is caused by the Millbury Public Schools's gross negligence or willful misconduct.

#### TERMINATION

If the work to be done under this Contract shall be abandoned, or if this Contract or any part thereof shall be assigned or transferred, without the previous written consent of the School, or if the Contract or any claim hereunder shall be assigned by the Contractor otherwise than as herein specified, or if at any time the School determines that the conditions herein specified as to the rate of progress are not fulfilled, or that the work or any part thereof, is unnecessarily or unreasonably delayed, or that the Contractor has violated any of the provisions of this Contract, the School may terminate this Contract and/or notify the Contractor or discontinue such work or such part thereof as the School may designate, and the School may thereupon by agreement or otherwise, as it may determine, complete the work, or any part thereof; and for such completion the School for itself or for its Contractor may take possession of and use or cause to be used in the completion of the work thereof any of such materials, apparatus, machinery, implements, and tools of every description as may be found upon said work. Termination pursuant to this paragraph shall not entitle the Contractor to any claim for damages on account thereof, nor shall it relieve the Contractor of any liability under this Contract.

This contract shall not be altered in any way without the consent of all parties to this contract. All alterations to this contract must be in writing and authorized as such by the Superintendent for the Contractor.

This contract shall be deemed to be a Massachusetts contract and its interpretation and construction shall be governed by the laws of Massachusetts and the Charter and Bylaws of the Millbury Public Schools.

MILLBURY PUBLIC SCHOOLS  
BID #0186-2402

MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE  
Millbury Jr./Sr. High School, 12 Martin Street, Millbury, Massachusetts 01527  
Elmwood Street Elementary School, 40 Elmwood Street, Millbury, Massachusetts 01527

This contract shall become effective when signed by both the Contractor and the Superintendent.

IN WITNESS WHEREOF, this Agreement has been executed, in duplicate, on the date first above written for the Millbury Public Schools by Gregory B. Myers, Superintendent, and for the said Contractor by its owner, or duly authorized officer or agent. This instrument shall take effect as a sealed instrument.

**MILLBURY PUBLIC SCHOOLS:**

**CONTRACTOR:**

\_\_\_\_\_  
Gregory B. Myers, Superintendent

\_\_\_\_\_  
Vendor Name.

\_\_\_\_\_  
Approved as to Appropriation:

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Jennifer Barrett, Town Finance Director

\_\_\_\_\_  
Print Name and Title

**Contract Price: \$**

Internal Use:

MPS BudgetSense Acct. No.:

School Hall Acct. No.:

END OF DOCUMENT

**SECTION VIII**  
**PREVAILING WAGE RATES**

## SECTION VIII - PREVAILING WAGE RATES

### 1.01 WAGE RATE DETERMINATION SCHEDULE

#### MASSACHUSETTS PREVAILING WAGE LAW (MGL. c149, §§26-27H) - AN IMPORTANT GUIDE FOR CONTRACTORS DOING PUBLIC WORKS PROJECTS IN MASSACHUSETTS

##### A. Prevailing Wage Schedules

1. Every contractor should obtain a schedule of prevailing wage rates for every public works project from the Awarding Authority (city, town, county, district, state agency or authority). It is the Awarding Authority's responsibility to ensure that a copy of the wage schedule is provided to all contractors from whom estimates or bids are solicited for all projects. The Commonwealth of Massachusetts Division of Occupational Safety (DOS), Department of Labor and Workforce Development will not issue wage schedules directly to contractors or employees.
2. Once a wage schedule has been issued for a project by DOS, it will remain in effect for the entire project. Appeals of wage determinations or classifications of employment may be made to the DOS Commissioner.
3. A copy of the wage schedule is required to be posted at the work site.
4. A wage schedule issued for a project may not be used on any other project. If, by chance, an Awarding Authority fails to provide you with a wage schedule to use when figuring your bid, do not use one you may have from another project. In this case, you should contact DOS immediately and urge the Awarding Authority to contact DOS to correct the oversight.
5. The failure of an Awarding Authority to provide a wage schedule does not excuse a contractor from paying the prevailing rate.

##### B. Bidding

1. The Attorney General's Division of Fair Labor and Business Practices enforces the prevailing wage law. All bids must reflect prevailing wage rates. Contractors may be required by an Awarding Authority to "demonstrate how (they) could complete the project and comply with Mass. Gen. Laws." The Division issued an "Advisory" discussing these and other points. For a copy, please contact the Attorney General's Office.

##### C. Paying Employees

1. Prevailing wages must be paid to all employees on public works projects regardless of whether they are employed by the general contractor, a filed sub-bidder or any sub-contractor. The prevailing wage applies equally to unionized and non-unionized workers.
2. All employees who perform work on a public works project must be paid hourly according to the wage schedule issued for the particular project.
3. The wage schedule issued for each project is in effect for the duration of that project. All wage increases listed on the schedule must be paid on the specified dates.
4. Employers are limited in the deductions that can be made from the hourly rate (represented as the "total rate" on the wage schedules). Only contributions to the following plans may be deducted:
  - Health and Welfare
  - Pension
  - Supplementary Unemployment
5. All contributions must be made to bona fide plans.



6. If an employer contributes to any, or all, of the above plans, it may deduct the hourly amount contributed from the “total rate.” If the employer does not contribute to any of the benefit plans listed above, then the employee’s hourly rate of pay will be the “total rate” from the wage schedule.
7. All other deductions, including but not limited to the following, may not be subtracted from the employee’s hourly prevailing wage rate:
  - Vacation Time
  - Sick Time
  - Training Funds
  - Charitable Contributions
  - Worker’s Compensation
  - Unemployment Insurance
  - Uniforms
8. Overtime, which must be paid to all employees who work more than 40 hours per week, shall be at least time-and-one-half the base rate (“total rate” less benefits, if any).
9. Any “separate check” given to an employee as the “benefit portion” of the prevailing wage may not be treated differently than the check for “base wages.” All “separate checks” are considered wages and subject to state and federal taxes, unemployment insurance and worker’s compensation requirements.

D. Payroll Records

1. Employers are required to submit weekly certified payroll reports to the Awarding Authority and keep them on file for three (3) years. A reporting form is sent along with each wage schedule that may be used. Each report must contain at least: the employee’s name, address, occupational classification, hours worked and wages paid. Do not submit weekly payroll reports to DOS.
2. After each contractor completes its portion of the public works project, the contractor must submit a Statement of Compliance to DOS. A Statement of Compliance form is also sent along with each wage schedule issued.

E. Apprentices

1. If your company employs apprentices, they must be registered with the Division of Apprentice Training (DAT). All persons not registered with DAT must be paid the “total rate” listed on the wage schedule. An apprentice sheet showing percentages based on the apprentice steps is included with all wage schedules.

F. Penalties

1. Failure to pay the prevailing wage subjects the contractor to potential civil and criminal liability.

G. Wage schedules are issued by:

Massachusetts Department of Labor and Workforce Development  
Division of Occupational Safety  
19 Staniford Street  
Boston, Massachusetts 02108  
Telephone 617-727-3492

H. Enforcement is carried out by:

Office of the Attorney General  
Fair Labor and Business Practices Division  
200 Portland Street  
Boston, Massachusetts 02114  
Telephone 617-727-3465

1.02 WAGE RATES

A. Classifications and wage rates as established by the Commonwealth of Massachusetts Division of Occupational Safety (DOS), Department of Labor and Workforce Development under the provisions of MGL Chapter 149, Section 26 [Wage Request Number 20231016-036; Issue Date – 11/01/2023, (41 pages)] immediately follows this Document.

1. The rate per hour of the wages to be paid to mechanics, apprentices, teamsters, chauffeurs, and laborers employed on the work shall not be less than the rate of wages included under “Minimum Wage Rates”.
2. The Contractor shall keep posted on the site a legible copy of said schedule. The Contractor shall also keep on file the wage rates and classifications of labor employed on this work in order that they may be available for inspection by the Awarding Authority, Administrator, or the Architect.
3. Apprentices employed pursuant to this determination of wage rates must be registered and approved by the State Apprenticeship Council. Wherever rates for journeymen or apprentices are not listed, and if any other labor is not included in this list, the Contract shall insert the rates of all those employed on the work.
4. The Contractor shall pay to any reserve police officers employed on the work the prevailing rate of wages paid to regular police officers as required by MGL Chapter 149 Section 34b, as amended. Such police officers shall be covered by Workmen's Compensation Insurance and Employer's Liability Insurance by the Contractor.

END OF DOCUMENT



MAURA HEALEY  
Governor

KIM DRISCOLL  
Lt. Governor

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

**Prevailing Wage Rates**

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

LAUREN JONES  
Secretary

MICHAEL FLANAGAN  
Director

**Awarding Authority:** Millbury Public Schools  
**Contract Number:** 0186-2402 **City/Town:** MILLBURY  
**Description of Work:** Replace doors and security upgrades at Millbury Jr./Sr. High School and Elmwood Street School in Millbury, MA.  
**Job Location:** Varies

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**Information about Prevailing Wage Schedules for Awarding Authorities and Contractors**

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Construction</b>						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	06/01/2023	\$38.95	\$14.57	\$17.29	\$0.00	\$70.81
	12/01/2023	\$38.95	\$14.57	\$18.67	\$0.00	\$72.19
	01/01/2024	\$38.95	\$15.07	\$18.67	\$0.00	\$72.69
	06/01/2024	\$39.95	\$15.07	\$18.67	\$0.00	\$73.69
	12/01/2024	\$39.95	\$15.07	\$20.17	\$0.00	\$75.19
	01/01/2025	\$39.95	\$15.57	\$20.17	\$0.00	\$75.69
	06/01/2025	\$40.95	\$15.57	\$20.17	\$0.00	\$76.69
	12/01/2025	\$40.95	\$15.57	\$21.78	\$0.00	\$78.30
	01/01/2026	\$40.95	\$16.17	\$21.78	\$0.00	\$78.90
	06/01/2026	\$41.95	\$16.17	\$21.78	\$0.00	\$79.90
	12/01/2026	\$41.95	\$16.17	\$23.52	\$0.00	\$81.64
	01/01/2027	\$41.95	\$16.77	\$23.52	\$0.00	\$82.24
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	06/01/2023	\$39.02	\$14.57	\$17.29	\$0.00	\$70.88
	12/01/2023	\$39.02	\$14.57	\$18.67	\$0.00	\$72.26
	01/01/2024	\$39.02	\$15.07	\$18.67	\$0.00	\$72.76
	06/01/2024	\$40.02	\$15.07	\$18.67	\$0.00	\$73.76
	12/01/2024	\$40.02	\$15.07	\$20.17	\$0.00	\$75.26
	01/01/2025	\$40.02	\$15.57	\$20.17	\$0.00	\$75.76
	06/01/2025	\$41.02	\$15.57	\$20.17	\$0.00	\$76.76
	12/01/2025	\$41.02	\$15.57	\$21.78	\$0.00	\$78.37
	01/01/2026	\$41.02	\$16.17	\$21.78	\$0.00	\$78.97
	06/01/2026	\$42.02	\$16.17	\$21.78	\$0.00	\$79.97
	12/01/2026	\$42.02	\$16.17	\$23.52	\$0.00	\$81.71
	01/01/2027	\$42.02	\$16.77	\$23.52	\$0.00	\$82.31
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	06/01/2023	\$39.14	\$14.57	\$17.29	\$0.00	\$71.00
	12/01/2023	\$39.14	\$14.57	\$18.67	\$0.00	\$72.38
	01/01/2024	\$39.14	\$15.07	\$18.67	\$0.00	\$72.88
	06/01/2024	\$40.14	\$15.07	\$18.67	\$0.00	\$73.88
	12/01/2024	\$40.14	\$15.07	\$20.17	\$0.00	\$75.38
	01/01/2025	\$40.14	\$15.57	\$20.17	\$0.00	\$75.88
	06/01/2025	\$41.14	\$15.57	\$20.17	\$0.00	\$76.88
	12/01/2025	\$41.14	\$15.57	\$21.78	\$0.00	\$78.49
	01/01/2026	\$41.14	\$16.17	\$21.78	\$0.00	\$79.09
	06/01/2026	\$42.14	\$16.17	\$21.78	\$0.00	\$80.09
	12/01/2026	\$42.14	\$16.17	\$23.52	\$0.00	\$81.83
	01/01/2027	\$42.14	\$16.77	\$23.52	\$0.00	\$82.43
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$103.05	\$9.40	\$23.12	\$0.00	\$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2023	\$38.21	\$9.40	\$16.89	\$0.00	\$64.50
	12/01/2023	\$39.11	\$9.40	\$16.89	\$0.00	\$65.40
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2023	\$38.21	\$9.40	\$16.89	\$0.00	\$64.50
	12/01/2023	\$39.11	\$9.40	\$16.89	\$0.00	\$65.40
	06/01/2024	\$40.44	\$9.40	\$16.89	\$0.00	\$66.73
	12/01/2024	\$41.77	\$9.40	\$16.89	\$0.00	\$68.06
	06/01/2025	\$43.16	\$9.40	\$16.89	\$0.00	\$69.45
	12/01/2025	\$44.54	\$9.40	\$16.89	\$0.00	\$70.83
	06/01/2026	\$45.98	\$9.40	\$16.89	\$0.00	\$72.27
	12/01/2026	\$47.42	\$9.40	\$16.89	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
ASBESTOS WORKER (PIPES & TANKS) <i>HEAT &amp; FROST INSULATORS LOCAL 6 (WORCESTER)</i>	06/01/2023	\$39.80	\$14.50	\$11.05	\$0.00	\$65.35
	12/01/2023	\$40.80	\$14.50	\$11.05	\$0.00	\$66.35
	06/01/2024	\$41.80	\$14.50	\$11.05	\$0.00	\$67.35
	12/01/2024	\$42.80	\$14.50	\$11.05	\$0.00	\$68.35
	06/01/2025	\$43.80	\$14.50	\$11.05	\$0.00	\$69.35
	12/01/2025	\$44.80	\$14.50	\$11.05	\$0.00	\$70.35
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
	06/01/2024	\$39.94	\$9.40	\$16.89	\$0.00	\$66.23
	12/01/2024	\$41.27	\$9.40	\$16.89	\$0.00	\$67.56
	06/01/2025	\$42.66	\$9.40	\$16.89	\$0.00	\$68.95
	12/01/2025	\$44.04	\$9.40	\$16.89	\$0.00	\$70.33
	06/01/2026	\$45.48	\$9.40	\$16.89	\$0.00	\$71.77
	12/01/2026	\$46.92	\$9.40	\$16.89	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$54.28	\$14.75	\$16.15	\$0.00	\$85.18
	12/01/2023	\$55.53	\$14.75	\$16.15	\$0.00	\$86.43
	06/01/2024	\$56.83	\$14.75	\$16.15	\$0.00	\$87.73
	12/01/2024	\$58.28	\$14.75	\$16.15	\$0.00	\$89.18
	06/01/2025	\$59.58	\$14.75	\$16.15	\$0.00	\$90.48
	12/01/2025	\$61.03	\$14.75	\$16.15	\$0.00	\$91.93
	06/01/2026	\$62.33	\$14.75	\$16.15	\$0.00	\$93.23
	12/01/2026	\$63.78	\$14.75	\$16.15	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$54.28	\$14.75	\$16.15	\$0.00	\$85.18
	12/01/2023	\$55.53	\$14.75	\$16.15	\$0.00	\$86.43
	06/01/2024	\$56.83	\$14.75	\$16.15	\$0.00	\$87.73
	12/01/2024	\$58.28	\$14.75	\$16.15	\$0.00	\$89.18
	06/01/2025	\$59.58	\$14.75	\$16.15	\$0.00	\$90.48
	12/01/2025	\$61.03	\$14.75	\$16.15	\$0.00	\$91.93
	06/01/2026	\$62.33	\$14.75	\$16.15	\$0.00	\$93.23
	12/01/2026	\$63.78	\$14.75	\$16.15	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BARCO-TYPE JUMPING TAMPER	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
LABORERS - ZONE 2	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER	06/01/2023	\$38.21	\$9.40	\$16.89	\$0.00	\$64.50
LABORERS - ZONE 2	12/01/2023	\$39.11	\$9.40	\$16.89	\$0.00	\$65.40
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY)	06/01/2023	\$38.21	\$9.40	\$16.89	\$0.00	\$64.50
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2023	\$39.11	\$9.40	\$16.89	\$0.00	\$65.40
	06/01/2024	\$40.44	\$9.40	\$16.89	\$0.00	\$66.73
	12/01/2024	\$41.77	\$9.40	\$16.89	\$0.00	\$68.06
	06/01/2025	\$43.16	\$9.40	\$16.89	\$0.00	\$69.45
	12/01/2025	\$44.54	\$9.40	\$16.89	\$0.00	\$70.83
	06/01/2026	\$45.98	\$9.40	\$16.89	\$0.00	\$72.27
	12/01/2026	\$47.42	\$9.40	\$16.89	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
BOILER MAKER	01/01/2023	\$47.37	\$7.07	\$20.31	\$0.00	\$74.75
BOILERMAKERS LOCAL 29	01/01/2024	\$48.12	\$7.07	\$20.60	\$0.00	\$75.79

**Apprentice - BOILERMAKER - Local 29**

**Effective Date - 01/01/2023**

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

**Effective Date - 01/01/2024**

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

**Notes:**

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (WORCESTER)</i>	08/01/2023	\$60.26	\$11.49	\$21.65	\$0.00	\$93.40
	02/01/2024	\$61.51	\$11.49	\$21.65	\$0.00	\$94.65
	08/01/2024	\$63.61	\$11.49	\$21.65	\$0.00	\$96.75
	02/01/2025	\$64.91	\$11.49	\$21.65	\$0.00	\$98.05
	08/01/2025	\$67.06	\$11.49	\$21.65	\$0.00	\$100.20
	02/01/2026	\$68.41	\$11.49	\$21.65	\$0.00	\$101.55
	08/01/2026	\$70.61	\$11.49	\$21.65	\$0.00	\$103.75
	02/01/2027	\$72.01	\$11.49	\$21.65	\$0.00	\$105.15

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

**Effective Date -** 08/01/2023

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

**Effective Date -** 02/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.76	\$11.49	\$21.65	\$0.00	\$63.90
2	60	\$36.91	\$11.49	\$21.65	\$0.00	\$70.05
3	70	\$43.06	\$11.49	\$21.65	\$0.00	\$76.20
4	80	\$49.21	\$11.49	\$21.65	\$0.00	\$82.35
5	90	\$55.36	\$11.49	\$21.65	\$0.00	\$88.50

**Notes:**

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

BULLDOZER/GRADER/SCRAPER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$53.69	\$14.75	\$16.15	\$0.00	\$84.59
	12/01/2023	\$54.93	\$14.75	\$16.15	\$0.00	\$85.83
	06/01/2024	\$56.21	\$14.75	\$16.15	\$0.00	\$87.11
	12/01/2024	\$57.65	\$14.75	\$16.15	\$0.00	\$88.55
	06/01/2025	\$58.93	\$14.75	\$16.15	\$0.00	\$89.83
	12/01/2025	\$60.37	\$14.75	\$16.15	\$0.00	\$91.27
	06/01/2026	\$61.65	\$14.75	\$16.15	\$0.00	\$92.55
	12/01/2026	\$63.09	\$14.75	\$16.15	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CAISSON & UNDERPINNING BOTTOM MAN <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2023	\$44.73	\$9.40	\$17.97	\$0.00	\$72.10
	12/01/2023	\$45.98	\$9.40	\$17.97	\$0.00	\$73.35
	06/01/2024	\$47.46	\$9.40	\$17.97	\$0.00	\$74.83
	12/01/2024	\$48.93	\$9.40	\$17.97	\$0.00	\$76.30
	06/01/2025	\$50.43	\$9.40	\$17.97	\$0.00	\$77.80
	12/01/2025	\$51.93	\$9.40	\$17.97	\$0.00	\$79.30
	06/01/2026	\$53.48	\$9.40	\$17.97	\$0.00	\$80.85
	12/01/2026	\$54.98	\$9.40	\$17.97	\$0.00	\$82.35
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2023	\$43.58	\$9.40	\$17.97	\$0.00	\$70.95
	12/01/2023	\$44.83	\$9.40	\$17.97	\$0.00	\$72.20
	06/01/2024	\$46.31	\$9.40	\$17.97	\$0.00	\$73.68
	12/01/2024	\$47.78	\$9.40	\$17.97	\$0.00	\$75.15
	06/01/2025	\$49.28	\$9.40	\$17.97	\$0.00	\$76.65
	12/01/2025	\$50.78	\$9.40	\$17.97	\$0.00	\$78.15
	06/01/2026	\$52.33	\$9.40	\$17.97	\$0.00	\$79.70
	12/01/2026	\$53.83	\$9.40	\$17.97	\$0.00	\$81.20
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2023	\$43.58	\$9.40	\$17.97	\$0.00	\$70.95
	12/01/2023	\$44.83	\$9.40	\$17.97	\$0.00	\$72.20
	06/01/2024	\$46.31	\$9.40	\$17.97	\$0.00	\$73.68
	12/01/2024	\$47.78	\$9.40	\$17.97	\$0.00	\$75.15
	06/01/2025	\$49.28	\$9.40	\$17.97	\$0.00	\$76.65
	12/01/2025	\$50.78	\$9.40	\$17.97	\$0.00	\$78.15
	06/01/2026	\$52.33	\$9.40	\$17.97	\$0.00	\$79.70
	12/01/2026	\$53.83	\$9.40	\$17.97	\$0.00	\$81.20
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	03/01/2023	\$45.12	\$9.33	\$19.97	\$0.00	\$74.42



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - CARPENTER - Zone 2 Eastern MA**

**Effective Date -** 03/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.56	\$9.33	\$1.73	\$0.00	\$33.62
2	60	\$27.07	\$9.33	\$1.73	\$0.00	\$38.13
3	70	\$31.58	\$9.33	\$14.78	\$0.00	\$55.69
4	75	\$33.84	\$9.33	\$14.78	\$0.00	\$57.95
5	80	\$36.10	\$9.33	\$16.51	\$0.00	\$61.94
6	80	\$36.10	\$9.33	\$16.51	\$0.00	\$61.94
7	90	\$40.61	\$9.33	\$18.24	\$0.00	\$68.18
8	90	\$40.61	\$9.33	\$18.24	\$0.00	\$68.18

**Notes:**

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80  
Step 1&2 \$30.71/ 3&4 \$36.93/ 5&6 \$56.82/ 7&8 \$63.06

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

CARPENTER WOOD FRAME	04/01/2023	\$24.16	\$7.21	\$4.80	\$0.00	\$36.17
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CARPENTERS-ZONE 3 (Wood Frame)

All Aspects of New Wood Frame Work

**Apprentice - CARPENTER (Wood Frame) - Zone 3**

**Effective Date -** 04/01/2023

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

**Notes:**

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

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

CEMENT MASONRY/PLASTERING	07/01/2023	\$48.19	\$13.00	\$23.57	\$1.30	\$86.06
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BRICKLAYERS LOCAL 3 (WORCESTER)

	01/01/2024	\$49.33	\$13.00	\$23.57	\$1.30	\$87.20
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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - CEMENT MASONRY/PLASTERING - Worcester**

**Effective Date - 07/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.10	\$13.00	\$15.93	\$0.00	\$53.03
2	60	\$28.91	\$13.00	\$18.57	\$1.30	\$61.78
3	65	\$31.32	\$13.00	\$19.57	\$1.30	\$65.19
4	70	\$33.73	\$13.00	\$20.57	\$1.30	\$68.60
5	75	\$36.14	\$13.00	\$21.57	\$1.30	\$72.01
6	80	\$38.55	\$13.00	\$22.57	\$1.30	\$75.42
7	90	\$43.37	\$13.00	\$23.57	\$1.30	\$81.24

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.67	\$13.00	\$15.93	\$0.00	\$53.60
2	60	\$29.60	\$13.00	\$18.57	\$1.30	\$62.47
3	65	\$32.06	\$13.00	\$19.57	\$1.30	\$65.93
4	70	\$34.53	\$13.00	\$20.57	\$1.30	\$69.40
5	75	\$37.00	\$13.00	\$21.57	\$1.30	\$72.87
6	80	\$39.46	\$13.00	\$22.57	\$1.30	\$76.33
7	90	\$44.40	\$13.00	\$23.57	\$1.30	\$82.27

**Notes:**

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

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

CHAIN SAW OPERATOR	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
LABORERS - ZONE 2	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES	06/01/2023	\$55.35	\$14.75	\$16.15	\$0.00	\$86.25
OPERATING ENGINEERS LOCAL 4	12/01/2023	\$56.63	\$14.75	\$16.15	\$0.00	\$87.53
	06/01/2024	\$57.95	\$14.75	\$16.15	\$0.00	\$88.85
	12/01/2024	\$59.43	\$14.75	\$16.15	\$0.00	\$90.33
	06/01/2025	\$60.76	\$14.75	\$16.15	\$0.00	\$91.66
	12/01/2025	\$62.23	\$14.75	\$16.15	\$0.00	\$93.13
	06/01/2026	\$63.56	\$14.75	\$16.15	\$0.00	\$94.46
	12/01/2026	\$65.04	\$14.75	\$16.15	\$0.00	\$95.94
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
COMPRESSOR OPERATOR	06/01/2023	\$35.30	\$14.75	\$16.15	\$0.00	\$66.20
OPERATING ENGINEERS LOCAL 4	12/01/2023	\$36.12	\$14.75	\$16.15	\$0.00	\$67.02
	06/01/2024	\$36.97	\$14.75	\$16.15	\$0.00	\$67.87
	12/01/2024	\$37.92	\$14.75	\$16.15	\$0.00	\$68.82
	06/01/2025	\$38.77	\$14.75	\$16.15	\$0.00	\$69.67
	12/01/2025	\$39.72	\$14.75	\$16.15	\$0.00	\$70.62
	06/01/2026	\$40.58	\$14.75	\$16.15	\$0.00	\$71.48
	12/01/2026	\$41.53	\$14.75	\$16.15	\$0.00	\$72.43

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DELEADER (BRIDGE) PAINTERS LOCAL 35 - ZONE 2	07/01/2023	\$55.51	\$9.65	\$23.70	\$0.00	\$88.86
	01/01/2024	\$56.06	\$9.95	\$23.95	\$0.00	\$89.96
	07/01/2024	\$57.26	\$9.95	\$23.95	\$0.00	\$91.16
	01/01/2025	\$58.46	\$9.95	\$23.95	\$0.00	\$92.36

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

**Effective Date - 07/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.76	\$9.65	\$0.00	\$0.00	\$37.41
2	55	\$30.53	\$9.65	\$6.55	\$0.00	\$46.73
3	60	\$33.31	\$9.65	\$7.14	\$0.00	\$50.10
4	65	\$36.08	\$9.65	\$7.74	\$0.00	\$53.47
5	70	\$38.86	\$9.65	\$20.13	\$0.00	\$68.64
6	75	\$41.63	\$9.65	\$20.73	\$0.00	\$72.01
7	80	\$44.41	\$9.65	\$21.32	\$0.00	\$75.38
8	90	\$49.96	\$9.65	\$22.51	\$0.00	\$82.12

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.03	\$9.95	\$0.00	\$0.00	\$37.98
2	55	\$30.83	\$9.95	\$6.66	\$0.00	\$47.44
3	60	\$33.64	\$9.95	\$7.26	\$0.00	\$50.85
4	65	\$36.44	\$9.95	\$7.87	\$0.00	\$54.26
5	70	\$39.24	\$9.95	\$20.32	\$0.00	\$69.51
6	75	\$42.05	\$9.95	\$20.93	\$0.00	\$72.93
7	80	\$44.85	\$9.95	\$21.53	\$0.00	\$76.33
8	90	\$50.45	\$9.95	\$22.74	\$0.00	\$83.14

<b>Notes:</b>
Steps are 750 hrs.

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

DEMO: ADZEMAN LABORERS - ZONE 2	06/01/2023	\$43.73	\$9.40	\$17.82	\$0.00	\$70.95
	12/01/2023	\$44.98	\$9.40	\$17.82	\$0.00	\$72.20
For apprentice rates see "Apprentice- LABORER"						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 2	06/01/2023	\$44.73	\$9.40	\$17.82	\$0.00	\$71.95
	12/01/2023	\$45.98	\$9.40	\$17.82	\$0.00	\$73.20
For apprentice rates see "Apprentice- LABORER"						
DEMO: BURNERS LABORERS - ZONE 2	06/01/2023	\$44.48	\$9.40	\$17.82	\$0.00	\$71.70
	12/01/2023	\$45.73	\$9.40	\$17.82	\$0.00	\$72.95
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER LABORERS - ZONE 2	06/01/2023	\$44.73	\$9.40	\$17.82	\$0.00	\$71.95
	12/01/2023	\$45.98	\$9.40	\$17.82	\$0.00	\$73.20
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2023	\$44.48	\$9.40	\$17.82	\$0.00	\$71.70
For apprentice rates see "Apprentice- LABORER"	12/01/2023	\$45.73	\$9.40	\$17.82	\$0.00	\$72.95
DEMO: WRECKING LABORER <i>LABORERS - ZONE 2</i>	06/01/2023	\$43.73	\$9.40	\$17.82	\$0.00	\$70.95
For apprentice rates see "Apprentice- LABORER"	12/01/2023	\$44.98	\$9.40	\$17.82	\$0.00	\$72.20
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$53.69	\$14.75	\$16.15	\$0.00	\$84.59
	12/01/2023	\$54.93	\$14.75	\$16.15	\$0.00	\$85.83
	06/01/2024	\$56.21	\$14.75	\$16.15	\$0.00	\$87.11
	12/01/2024	\$57.65	\$14.75	\$16.15	\$0.00	\$88.55
	06/01/2025	\$58.93	\$14.75	\$16.15	\$0.00	\$89.83
	12/01/2025	\$60.37	\$14.75	\$16.15	\$0.00	\$91.27
	06/01/2026	\$61.65	\$14.75	\$16.15	\$0.00	\$92.55
	12/01/2026	\$63.09	\$14.75	\$16.15	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$68.70	\$9.40	\$23.12	\$0.00	\$101.22
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$73.60	\$9.40	\$23.12	\$0.00	\$106.12
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$103.05	\$9.40	\$23.12	\$0.00	\$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) <i>DRAWBRIDGE - SEIU LOCAL 888</i>	07/01/2020	\$26.77	\$6.67	\$3.93	\$0.16	\$37.53
ELECTRICIAN <i>ELECTRICIANS LOCAL 96</i>	09/03/2023	\$45.99	\$13.00	\$18.84	\$0.00	\$77.83
	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34

Apprentice - *ELECTRICIAN - Local 96*

Effective Date - 09/03/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.40	\$13.00	\$0.55	\$0.00	\$31.95
2	45	\$20.70	\$13.00	\$0.62	\$0.00	\$34.32
3	48	\$22.08	\$13.00	\$15.49	\$0.00	\$50.57
4	55	\$25.29	\$13.00	\$15.94	\$0.00	\$54.23
5	65	\$29.89	\$13.00	\$16.59	\$0.00	\$59.48
6	80	\$36.79	\$13.00	\$17.55	\$0.00	\$67.34

Effective Date - 09/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.82	\$13.99	\$0.56	\$0.00	\$33.37
2	45	\$21.17	\$13.99	\$0.64	\$0.00	\$35.80
3	48	\$22.58	\$13.99	\$15.79	\$0.00	\$52.36
4	55	\$25.88	\$13.99	\$16.26	\$0.00	\$56.13
5	65	\$30.58	\$13.99	\$16.91	\$0.00	\$61.48
6	80	\$37.64	\$13.99	\$17.90	\$0.00	\$69.53

Notes:

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

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

ELEVATOR CONSTRUCTOR	01/01/2023	\$61.13	\$16.08	\$20.56	\$0.00	\$97.77
ELEVATOR CONSTRUCTORS LOCAL 41	01/01/2024	\$61.98	\$16.18	\$20.96	\$0.00	\$99.12
	01/01/2025	\$62.83	\$16.28	\$21.36	\$0.00	\$100.47
	01/01/2026	\$63.68	\$16.38	\$21.76	\$0.00	\$101.82
	01/01/2027	\$64.53	\$16.48	\$22.16	\$0.00	\$103.17

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - ELEVATOR CONSTRUCTOR - Local 41**

**Effective Date -** 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.57	\$16.08	\$0.00	\$0.00	\$46.65
2	55	\$33.62	\$16.08	\$20.56	\$0.00	\$70.26
3	65	\$39.73	\$16.08	\$20.56	\$0.00	\$76.37
4	70	\$42.79	\$16.08	\$20.56	\$0.00	\$79.43
5	80	\$48.90	\$16.08	\$20.56	\$0.00	\$85.54

**Effective Date -** 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.99	\$16.18	\$0.00	\$0.00	\$47.17
2	55	\$34.09	\$16.18	\$20.96	\$0.00	\$71.23
3	65	\$40.29	\$16.18	\$20.96	\$0.00	\$77.43
4	70	\$43.39	\$16.18	\$20.96	\$0.00	\$80.53
5	80	\$49.58	\$16.18	\$20.96	\$0.00	\$86.72

**Notes:**

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

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

ELEVATOR CONSTRUCTOR HELPER	01/01/2023	\$42.79	\$16.08	\$20.56	\$0.00	\$79.43
ELEVATOR CONSTRUCTORS LOCAL 41	01/01/2024	\$43.39	\$16.18	\$20.96	\$0.00	\$80.53
	01/01/2025	\$43.98	\$16.28	\$21.36	\$0.00	\$81.62
	01/01/2026	\$44.58	\$16.38	\$21.76	\$0.00	\$82.72
	01/01/2027	\$45.17	\$16.48	\$22.16	\$0.00	\$83.81

For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY)	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
	06/01/2024	\$39.94	\$9.40	\$16.89	\$0.00	\$66.23
	12/01/2024	\$41.27	\$9.40	\$16.89	\$0.00	\$67.56
	06/01/2025	\$42.66	\$9.40	\$16.89	\$0.00	\$68.95
	12/01/2025	\$44.04	\$9.40	\$16.89	\$0.00	\$70.33
	06/01/2026	\$45.48	\$9.40	\$16.89	\$0.00	\$71.77
	12/01/2026	\$46.92	\$9.40	\$16.89	\$0.00	\$73.21

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

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY	05/01/2023	\$49.06	\$14.50	\$16.15	\$0.00	\$79.71
OPERATING ENGINEERS LOCAL 4	11/01/2023	\$50.30	\$14.50	\$16.15	\$0.00	\$80.95
	05/01/2024	\$51.54	\$14.50	\$16.15	\$0.00	\$82.19
	11/01/2024	\$52.83	\$14.50	\$16.15	\$0.00	\$83.48
	05/01/2025	\$54.27	\$14.50	\$16.15	\$0.00	\$84.92
	11/01/2025	\$55.56	\$14.50	\$16.15	\$0.00	\$86.21
	05/01/2026	\$57.00	\$14.50	\$16.15	\$0.00	\$87.65
	11/01/2026	\$58.29	\$14.50	\$16.15	\$0.00	\$88.94
	05/01/2027	\$59.72	\$14.50	\$16.15	\$0.00	\$90.37

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2023	\$50.62	\$14.50	\$16.15	\$0.00	\$81.27
	11/01/2023	\$51.87	\$14.50	\$16.15	\$0.00	\$82.52
	05/01/2024	\$53.12	\$14.50	\$16.15	\$0.00	\$83.77
	11/01/2024	\$54.42	\$14.50	\$16.15	\$0.00	\$85.07
	05/01/2025	\$55.87	\$14.50	\$16.15	\$0.00	\$86.52
	11/01/2025	\$57.17	\$14.50	\$16.15	\$0.00	\$87.82
	05/01/2026	\$58.62	\$14.50	\$16.15	\$0.00	\$89.27
	11/01/2026	\$59.92	\$14.50	\$16.15	\$0.00	\$90.57
	05/01/2027	\$61.37	\$14.50	\$16.15	\$0.00	\$92.02
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2023	\$24.20	\$14.50	\$16.15	\$0.00	\$54.85
	11/01/2023	\$24.93	\$14.50	\$16.15	\$0.00	\$55.58
	05/01/2024	\$25.66	\$14.50	\$16.15	\$0.00	\$56.31
	11/01/2024	\$26.42	\$14.50	\$16.15	\$0.00	\$57.07
	05/01/2025	\$27.27	\$14.50	\$16.15	\$0.00	\$57.92
	11/01/2025	\$28.03	\$14.50	\$16.15	\$0.00	\$58.68
	05/01/2026	\$28.88	\$14.50	\$16.15	\$0.00	\$59.53
	11/01/2026	\$29.64	\$14.50	\$16.15	\$0.00	\$60.29
	05/01/2027	\$30.49	\$14.50	\$16.15	\$0.00	\$61.14
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 96</i>	09/03/2023	\$45.99	\$13.00	\$18.84	\$0.00	\$77.83
	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINT/COMMISSIONING <i>ELECTRICIANS LOCAL 96</i>	09/03/2023	\$45.99	\$13.00	\$18.84	\$0.00	\$77.83
	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$43.96	\$14.75	\$16.15	\$0.00	\$74.86
	12/01/2023	\$44.97	\$14.75	\$16.15	\$0.00	\$75.87
	06/01/2024	\$46.03	\$14.75	\$16.15	\$0.00	\$76.93
	12/01/2024	\$47.21	\$14.75	\$16.15	\$0.00	\$78.11
	06/01/2025	\$48.27	\$14.75	\$16.15	\$0.00	\$79.17
	12/01/2025	\$49.44	\$14.75	\$16.15	\$0.00	\$80.34
	06/01/2026	\$50.50	\$14.75	\$16.15	\$0.00	\$81.40
	12/01/2026	\$51.68	\$14.75	\$16.15	\$0.00	\$82.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FLAGGER & SIGNALER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2023	\$25.98	\$9.40	\$16.89	\$0.00	\$52.27
	12/01/2023	\$25.98	\$9.40	\$16.89	\$0.00	\$52.27
	06/01/2024	\$27.01	\$9.40	\$16.89	\$0.00	\$53.30
	12/01/2024	\$27.01	\$9.40	\$16.89	\$0.00	\$53.30
	06/01/2025	\$28.09	\$9.40	\$16.89	\$0.00	\$54.38
	12/01/2025	\$28.09	\$9.40	\$16.89	\$0.00	\$54.38
	06/01/2026	\$29.21	\$9.40	\$16.89	\$0.00	\$55.50
	12/01/2026	\$29.21	\$9.40	\$16.89	\$0.00	\$55.50
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE II</i>	03/01/2022	\$47.96	\$9.33	\$20.27	\$0.00	\$77.56

**Apprentice - FLOORCOVERER - Local 2168 Zone II**

**Effective Date - 03/01/2022**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.98	\$9.33	\$1.79	\$0.00	\$35.10
2	55	\$26.38	\$9.33	\$1.79	\$0.00	\$37.50
3	60	\$28.78	\$9.33	\$14.90	\$0.00	\$53.01
4	65	\$31.17	\$9.33	\$14.90	\$0.00	\$55.40
5	70	\$33.57	\$9.33	\$16.69	\$0.00	\$59.59
6	75	\$35.97	\$9.33	\$16.69	\$0.00	\$61.99
7	80	\$38.37	\$9.33	\$18.48	\$0.00	\$66.18
8	85	\$40.77	\$9.33	\$18.48	\$0.00	\$68.58

**Notes:** Steps are 750 hrs.

% After 10/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)

Step 1&2 \$31.90/ 3&4 \$38.39/ 5&6 \$58.70/ 7&8 \$65.26

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

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$54.28	\$14.75	\$16.15	\$0.00	\$85.18
	12/01/2023	\$55.53	\$14.75	\$16.15	\$0.00	\$86.43
	06/01/2024	\$56.83	\$14.75	\$16.15	\$0.00	\$87.73
	12/01/2024	\$58.28	\$14.75	\$16.15	\$0.00	\$89.18
	06/01/2025	\$59.58	\$14.75	\$16.15	\$0.00	\$90.48
	12/01/2025	\$61.03	\$14.75	\$16.15	\$0.00	\$91.93
	06/01/2026	\$62.33	\$14.75	\$16.15	\$0.00	\$93.23
	12/01/2026	\$63.78	\$14.75	\$16.15	\$0.00	\$94.68

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$35.30	\$14.75	\$16.15	\$0.00	\$66.20
	12/01/2023	\$36.12	\$14.75	\$16.15	\$0.00	\$67.02
	06/01/2024	\$36.97	\$14.75	\$16.15	\$0.00	\$67.87
	12/01/2024	\$37.92	\$14.75	\$16.15	\$0.00	\$68.82
	06/01/2025	\$38.77	\$14.75	\$16.15	\$0.00	\$69.67
	12/01/2025	\$39.72	\$14.75	\$16.15	\$0.00	\$70.62
	06/01/2026	\$40.58	\$14.75	\$16.15	\$0.00	\$71.48
	12/01/2026	\$41.53	\$14.75	\$16.15	\$0.00	\$72.43

For apprentice rates see "Apprentice- OPERATING ENGINEERS"



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	07/01/2023	\$45.01	\$9.65	\$23.70	\$0.00	\$78.36
	01/01/2024	\$45.56	\$9.95	\$23.95	\$0.00	\$79.46
	07/01/2024	\$46.76	\$9.95	\$23.95	\$0.00	\$80.66
	01/01/2025	\$47.96	\$9.95	\$23.95	\$0.00	\$81.86

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

**Effective Date - 07/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.51	\$9.65	\$0.00	\$0.00	\$32.16
2	55	\$24.76	\$9.65	\$6.55	\$0.00	\$40.96
3	60	\$27.01	\$9.65	\$7.14	\$0.00	\$43.80
4	65	\$29.26	\$9.65	\$7.74	\$0.00	\$46.65
5	70	\$31.51	\$9.65	\$20.13	\$0.00	\$61.29
6	75	\$33.76	\$9.65	\$20.73	\$0.00	\$64.14
7	80	\$36.01	\$9.65	\$21.32	\$0.00	\$66.98
8	90	\$40.51	\$9.65	\$22.51	\$0.00	\$72.67

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.78	\$9.95	\$0.00	\$0.00	\$32.73
2	55	\$25.06	\$9.95	\$6.66	\$0.00	\$41.67
3	60	\$27.34	\$9.95	\$7.26	\$0.00	\$44.55
4	65	\$29.61	\$9.95	\$7.87	\$0.00	\$47.43
5	70	\$31.89	\$9.95	\$20.32	\$0.00	\$62.16
6	75	\$34.17	\$9.95	\$20.93	\$0.00	\$65.05
7	80	\$36.45	\$9.95	\$21.53	\$0.00	\$67.93
8	90	\$41.00	\$9.95	\$22.74	\$0.00	\$73.69

**Notes:**

Steps are 750 hrs.

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

HOISTING ENGINEER/CRANES/GRADALLS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$54.28	\$14.75	\$16.15	\$0.00	\$85.18
	12/01/2023	\$55.53	\$14.75	\$16.15	\$0.00	\$86.43
	06/01/2024	\$56.83	\$14.75	\$16.15	\$0.00	\$87.73
	12/01/2024	\$58.28	\$14.75	\$16.15	\$0.00	\$89.18
	06/01/2025	\$59.58	\$14.75	\$16.15	\$0.00	\$90.48
	12/01/2025	\$61.03	\$14.75	\$16.15	\$0.00	\$91.93
	06/01/2026	\$62.33	\$14.75	\$16.15	\$0.00	\$93.23
	12/01/2026	\$63.78	\$14.75	\$16.15	\$0.00	\$94.68

**Apprentice - OPERATING ENGINEERS - Local 4**

**Effective Date - 06/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$29.85	\$14.75	\$0.00	\$0.00	\$44.60
2	60	\$32.57	\$14.75	\$16.15	\$0.00	\$63.47
3	65	\$35.28	\$14.75	\$16.15	\$0.00	\$66.18
4	70	\$38.00	\$14.75	\$16.15	\$0.00	\$68.90
5	75	\$40.71	\$14.75	\$16.15	\$0.00	\$71.61
6	80	\$43.42	\$14.75	\$16.15	\$0.00	\$74.32
7	85	\$46.14	\$14.75	\$16.15	\$0.00	\$77.04
8	90	\$48.85	\$14.75	\$16.15	\$0.00	\$79.75

**Effective Date - 12/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$30.54	\$14.75	\$0.00	\$0.00	\$45.29
2	60	\$33.32	\$14.75	\$16.15	\$0.00	\$64.22
3	65	\$36.09	\$14.75	\$16.15	\$0.00	\$66.99
4	70	\$38.87	\$14.75	\$16.15	\$0.00	\$69.77
5	75	\$41.65	\$14.75	\$16.15	\$0.00	\$72.55
6	80	\$44.42	\$14.75	\$16.15	\$0.00	\$75.32
7	85	\$47.20	\$14.75	\$16.15	\$0.00	\$78.10
8	90	\$49.98	\$14.75	\$16.15	\$0.00	\$80.88

Notes:

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

HVAC (DUCTWORK)	07/01/2023	\$42.55	\$10.64	\$17.54	\$2.05	\$72.78
SHEETMETAL WORKERS LOCAL 63	01/01/2024	\$43.80	\$10.64	\$17.54	\$2.05	\$74.03
	07/01/2024	\$45.05	\$10.64	\$17.54	\$2.05	\$75.28
	01/01/2025	\$46.30	\$10.64	\$17.54	\$2.05	\$76.53
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (ELECTRICAL CONTROLS)	09/03/2023	\$45.99	\$13.00	\$18.84	\$0.00	\$77.83
ELECTRICIANS LOCAL 96	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34
For apprentice rates see "Apprentice- ELECTRICIAN"						
HVAC (TESTING AND BALANCING - AIR)	07/01/2023	\$42.55	\$10.64	\$17.54	\$2.05	\$72.78
SHEETMETAL WORKERS LOCAL 63	01/01/2024	\$43.80	\$10.64	\$17.54	\$2.05	\$74.03
	07/01/2024	\$45.05	\$10.64	\$17.54	\$2.05	\$75.28
	01/01/2025	\$46.30	\$10.64	\$17.54	\$2.05	\$76.53
For apprentice rates see "Apprentice- SHEET METAL WORKER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC (TESTING AND BALANCING -WATER) <i>PLUMBERS LOCAL 4</i>	09/01/2023	\$52.55	\$9.90	\$17.42	\$0.00	\$79.87
	03/01/2024	\$53.95	\$9.90	\$17.42	\$0.00	\$81.27
	09/01/2024	\$55.35	\$9.90	\$17.42	\$0.00	\$82.67
	03/01/2025	\$56.75	\$9.90	\$17.42	\$0.00	\$84.07
	09/01/2025	\$58.15	\$9.90	\$17.42	\$0.00	\$85.47
	03/01/2026	\$59.55	\$9.90	\$17.42	\$0.00	\$86.87
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PLUMBERS LOCAL 4</i>	09/01/2023	\$52.55	\$9.90	\$17.42	\$0.00	\$79.87
	03/01/2024	\$53.95	\$9.90	\$17.42	\$0.00	\$81.27
	09/01/2024	\$55.35	\$9.90	\$17.42	\$0.00	\$82.67
	03/01/2025	\$56.75	\$9.90	\$17.42	\$0.00	\$84.07
	09/01/2025	\$58.15	\$9.90	\$17.42	\$0.00	\$85.47
	03/01/2026	\$59.55	\$9.90	\$17.42	\$0.00	\$86.87
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 2</i>	06/01/2023	\$38.21	\$9.40	\$16.89	\$0.00	\$64.50
	12/01/2023	\$39.11	\$9.40	\$16.89	\$0.00	\$65.40
For apprentice rates see "Apprentice- LABORER"						
HYDRAULIC DRILLS (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2023	\$38.21	\$9.40	\$16.89	\$0.00	\$64.50
	12/01/2023	\$39.11	\$9.40	\$16.89	\$0.00	\$65.40
	06/01/2024	\$40.44	\$9.40	\$16.89	\$0.00	\$66.73
	12/01/2024	\$41.77	\$9.40	\$16.89	\$0.00	\$68.06
	06/01/2025	\$43.16	\$9.40	\$16.89	\$0.00	\$69.45
	12/01/2025	\$44.54	\$9.40	\$16.89	\$0.00	\$70.83
	06/01/2026	\$45.98	\$9.40	\$16.89	\$0.00	\$72.27
	12/01/2026	\$47.42	\$9.40	\$16.89	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
INSULATOR (PIPES & TANKS) <i>HEAT &amp; FROST INSULATORS LOCAL 6 (WORCESTER)</i>	09/01/2023	\$48.15	\$14.75	\$19.61	\$0.00	\$82.51
	09/01/2024	\$51.23	\$14.75	\$19.61	\$0.00	\$85.59
	09/01/2025	\$54.31	\$14.75	\$19.61	\$0.00	\$88.67
	09/01/2026	\$57.38	\$14.75	\$19.61	\$0.00	\$91.74

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

Effective Date - 09/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.08	\$14.75	\$14.32	\$0.00	\$53.15
2	60	\$28.89	\$14.75	\$15.37	\$0.00	\$59.01
3	70	\$33.71	\$14.75	\$16.43	\$0.00	\$64.89
4	80	\$38.52	\$14.75	\$17.49	\$0.00	\$70.76

Effective Date - 09/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.62	\$14.75	\$14.32	\$0.00	\$54.69
2	60	\$30.74	\$14.75	\$15.37	\$0.00	\$60.86
3	70	\$35.86	\$14.75	\$16.43	\$0.00	\$67.04
4	80	\$40.98	\$14.75	\$17.49	\$0.00	\$73.22

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER	03/16/2023	\$52.42	\$8.35	\$26.70	\$0.00	\$87.47
IRONWORKERS LOCAL 7 (WORCESTER AREA)	03/16/2024	\$53.67	\$8.35	\$26.70	\$0.00	\$88.72

Apprentice - IRONWORKER - Local 7 Worcester

Effective Date - 03/16/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$31.45	\$8.35	\$26.70	\$0.00	\$66.50
2	70	\$36.69	\$8.35	\$26.70	\$0.00	\$71.74
3	75	\$39.32	\$8.35	\$26.70	\$0.00	\$74.37
4	80	\$41.94	\$8.35	\$26.70	\$0.00	\$76.99
5	85	\$44.56	\$8.35	\$26.70	\$0.00	\$79.61
6	90	\$47.18	\$8.35	\$26.70	\$0.00	\$82.23

Effective Date - 03/16/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$32.20	\$8.35	\$26.70	\$0.00	\$67.25
2	70	\$37.57	\$8.35	\$26.70	\$0.00	\$72.62
3	75	\$40.25	\$8.35	\$26.70	\$0.00	\$75.30
4	80	\$42.94	\$8.35	\$26.70	\$0.00	\$77.99
5	85	\$45.62	\$8.35	\$26.70	\$0.00	\$80.67
6	90	\$48.30	\$8.35	\$26.70	\$0.00	\$83.35

Notes:

Apprentice to Journeyworker Ratio:1:4

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
JACKHAMMER & PAVING BREAKER OPERATOR	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
LABORERS - ZONE 2	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
LABORER	06/01/2023	\$37.46	\$9.40	\$16.89	\$0.00	\$63.75
LABORERS - ZONE 2	12/01/2023	\$38.36	\$9.40	\$16.89	\$0.00	\$64.65

**Apprentice - LABORER - Zone 2**

**Effective Date - 06/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.48	\$9.40	\$16.89	\$0.00	\$48.77
2	70	\$26.22	\$9.40	\$16.89	\$0.00	\$52.51
3	80	\$29.97	\$9.40	\$16.89	\$0.00	\$56.26
4	90	\$33.71	\$9.40	\$16.89	\$0.00	\$60.00

**Effective Date - 12/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.02	\$9.40	\$16.89	\$0.00	\$49.31
2	70	\$26.85	\$9.40	\$16.89	\$0.00	\$53.14
3	80	\$30.69	\$9.40	\$16.89	\$0.00	\$56.98
4	90	\$34.52	\$9.40	\$16.89	\$0.00	\$60.81

**Notes:**

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

LABORER (HEAVY & HIGHWAY)	06/01/2023	\$37.46	\$9.40	\$16.89	\$0.00	\$63.75
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2023	\$38.36	\$9.40	\$16.89	\$0.00	\$64.65
	06/01/2024	\$39.69	\$9.40	\$16.89	\$0.00	\$65.98
	12/01/2024	\$41.02	\$9.40	\$16.89	\$0.00	\$67.31
	06/01/2025	\$42.41	\$9.40	\$16.89	\$0.00	\$68.70
	12/01/2025	\$43.79	\$9.40	\$16.89	\$0.00	\$70.08
	06/01/2026	\$45.23	\$9.40	\$16.89	\$0.00	\$71.52
	12/01/2026	\$46.67	\$9.40	\$16.89	\$0.00	\$72.96

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - LABORER (Heavy &amp; Highway) - Zone 2</b>						
<b>Effective Date - 06/01/2023</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.48	\$9.40	\$16.89	\$0.00	\$48.77
2	70	\$26.22	\$9.40	\$16.89	\$0.00	\$52.51
3	80	\$29.97	\$9.40	\$16.89	\$0.00	\$56.26
4	90	\$33.71	\$9.40	\$16.89	\$0.00	\$60.00
<b>Effective Date - 12/01/2023</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.02	\$9.40	\$16.89	\$0.00	\$49.31
2	70	\$26.85	\$9.40	\$16.89	\$0.00	\$53.14
3	80	\$30.69	\$9.40	\$16.89	\$0.00	\$56.98
4	90	\$34.52	\$9.40	\$16.89	\$0.00	\$60.81
<b>Notes:</b>						
<b>Apprentice to Journeyworker Ratio:1:5</b>						
LABORER: CARPENTER TENDER		06/01/2023	\$37.46	\$9.40	\$16.89	\$63.75
LABORERS - ZONE 2		12/01/2023	\$38.36	\$9.40	\$16.89	\$64.65
For apprentice rates see "Apprentice- LABORER"						
LABORER: CEMENT FINISHER TENDER		06/01/2023	\$37.46	\$9.40	\$16.89	\$63.75
LABORERS - ZONE 2		12/01/2023	\$38.36	\$9.40	\$16.89	\$64.65
For apprentice rates see "Apprentice- LABORER"						
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER		06/01/2023	\$37.55	\$9.40	\$16.95	\$63.90
LABORERS - ZONE 2		12/01/2023	\$38.45	\$9.40	\$16.95	\$64.80
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER		06/01/2023	\$37.71	\$9.40	\$16.89	\$64.00
LABORERS - ZONE 2		12/01/2023	\$38.61	\$9.40	\$16.89	\$64.90
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER (HEAVY & HIGHWAY)		06/01/2023	\$37.71	\$9.40	\$16.89	\$64.00
LABORERS - ZONE 2 (HEAVY & HIGHWAY)		12/01/2023	\$38.61	\$9.40	\$16.89	\$64.90
		06/01/2024	\$39.94	\$9.40	\$16.89	\$66.23
		12/01/2024	\$41.27	\$9.40	\$16.89	\$67.56
		06/01/2025	\$42.66	\$9.40	\$16.89	\$68.95
		12/01/2025	\$44.04	\$9.40	\$16.89	\$70.33
		06/01/2026	\$45.48	\$9.40	\$16.89	\$71.77
		12/01/2026	\$46.92	\$9.40	\$16.89	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
LABORER: MULTI-TRADE TENDER		06/01/2023	\$37.46	\$9.40	\$16.89	\$63.75
LABORERS - ZONE 2		12/01/2023	\$38.36	\$9.40	\$16.89	\$64.65
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER		06/01/2023	\$37.46	\$9.40	\$16.89	\$63.75
LABORERS - ZONE 2		12/01/2023	\$38.36	\$9.40	\$16.89	\$64.65
This classification applies to the removal of standing trees, and the trimming and removal of branches and limbs when related to public works construction or site clearance incidental to construction . For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LASER BEAM OPERATOR	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
LABORERS - ZONE 2	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR (HEAVY & HIGHWAY)	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
	06/01/2024	\$39.94	\$9.40	\$16.89	\$0.00	\$66.23
	12/01/2024	\$41.27	\$9.40	\$16.89	\$0.00	\$67.56
	06/01/2025	\$42.66	\$9.40	\$16.89	\$0.00	\$68.95
	12/01/2025	\$44.04	\$9.40	\$16.89	\$0.00	\$70.33
	06/01/2026	\$45.48	\$9.40	\$16.89	\$0.00	\$71.77
	12/01/2026	\$46.92	\$9.40	\$16.89	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
MARBLE & TILE FINISHERS	08/01/2023	\$47.89	\$11.49	\$20.37	\$0.00	\$79.75
BRICKLAYERS LOCAL 3 - MARBLE & TILE	02/01/2024	\$48.89	\$11.49	\$20.37	\$0.00	\$80.75
	08/01/2024	\$50.57	\$11.49	\$20.37	\$0.00	\$82.43
	02/01/2025	\$51.61	\$11.49	\$20.37	\$0.00	\$83.47
	08/01/2025	\$53.33	\$11.49	\$20.37	\$0.00	\$85.19
	02/01/2026	\$54.41	\$11.49	\$20.37	\$0.00	\$86.27
	08/01/2026	\$56.17	\$11.49	\$20.37	\$0.00	\$88.03
	02/01/2027	\$57.29	\$11.49	\$20.37	\$0.00	\$89.15

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

**Effective Date -** 08/01/2023

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

**Effective Date -** 02/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.45	\$11.49	\$20.37	\$0.00	\$56.31
2	60	\$29.33	\$11.49	\$20.37	\$0.00	\$61.19
3	70	\$34.22	\$11.49	\$20.37	\$0.00	\$66.08
4	80	\$39.11	\$11.49	\$20.37	\$0.00	\$70.97
5	90	\$44.00	\$11.49	\$20.37	\$0.00	\$75.86

**Notes:**

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
MARBLE MASONS,TILELAYERS & TERRAZZO MECH <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	08/01/2023	\$62.42	\$11.49	\$22.31	\$0.00	\$96.22
	02/01/2024	\$63.67	\$11.49	\$22.31	\$0.00	\$97.47
	08/01/2024	\$65.77	\$11.49	\$22.31	\$0.00	\$99.57
	02/01/2025	\$67.07	\$11.49	\$22.31	\$0.00	\$100.87
	08/01/2025	\$69.22	\$11.49	\$22.31	\$0.00	\$103.02
	02/01/2026	\$70.57	\$11.49	\$22.31	\$0.00	\$104.37
	08/01/2026	\$72.77	\$11.49	\$22.31	\$0.00	\$106.57
	02/01/2027	\$74.17	\$11.49	\$22.31	\$0.00	\$107.97

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

**Effective Date -** 08/01/2023

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

**Effective Date -** 02/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.84	\$11.49	\$22.31	\$0.00	\$65.64
2	60	\$38.20	\$11.49	\$22.31	\$0.00	\$72.00
3	70	\$44.57	\$11.49	\$22.31	\$0.00	\$78.37
4	80	\$50.94	\$11.49	\$22.31	\$0.00	\$84.74
5	90	\$57.30	\$11.49	\$22.31	\$0.00	\$91.10

**Notes:**

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

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$53.69	\$14.75	\$16.15	\$0.00	\$84.59
	12/01/2023	\$54.93	\$14.75	\$16.15	\$0.00	\$85.83
	06/01/2024	\$56.21	\$14.75	\$16.15	\$0.00	\$87.11
	12/01/2024	\$57.65	\$14.75	\$16.15	\$0.00	\$88.55
	06/01/2025	\$58.93	\$14.75	\$16.15	\$0.00	\$89.83
	12/01/2025	\$60.37	\$14.75	\$16.15	\$0.00	\$91.27
	06/01/2026	\$61.65	\$14.75	\$16.15	\$0.00	\$92.55
	12/01/2026	\$63.09	\$14.75	\$16.15	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$53.69	\$14.75	\$16.15	\$0.00	\$84.59
	12/01/2023	\$54.93	\$14.75	\$16.15	\$0.00	\$85.83
	06/01/2024	\$56.21	\$14.75	\$16.15	\$0.00	\$87.11
	12/01/2024	\$57.65	\$14.75	\$16.15	\$0.00	\$88.55
	06/01/2025	\$58.93	\$14.75	\$16.15	\$0.00	\$89.83
	12/01/2025	\$60.37	\$14.75	\$16.15	\$0.00	\$91.27
	06/01/2026	\$61.65	\$14.75	\$16.15	\$0.00	\$92.55
	12/01/2026	\$63.09	\$14.75	\$16.15	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MILLWRIGHT (Zone 3) <i>MILLWRIGHTS LOCAL 1121 - Zone 3</i>	01/02/2023	\$40.16	\$8.58	\$21.57	\$0.00	\$70.31

**Apprentice - *MILLWRIGHT - Local 1121 Zone 3***

**Effective Date - 01/02/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$22.09	\$8.58	\$5.72	\$0.00	\$36.39
2	65	\$26.10	\$8.58	\$17.93	\$0.00	\$52.61
3	75	\$30.12	\$8.58	\$18.98	\$0.00	\$57.68
4	85	\$34.14	\$8.58	\$20.01	\$0.00	\$62.73

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

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

MORTAR MIXER <i>LABORERS - ZONE 2</i>	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
OILER (OTHER THAN TRUCK CRANES,GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$24.34	\$14.75	\$16.15	\$0.00	\$55.24
	12/01/2023	\$24.91	\$14.75	\$16.15	\$0.00	\$55.81
	06/01/2024	\$25.51	\$14.75	\$16.15	\$0.00	\$56.41
	12/01/2024	\$26.17	\$14.75	\$16.15	\$0.00	\$57.07
	06/01/2025	\$26.77	\$14.75	\$16.15	\$0.00	\$57.67
	12/01/2025	\$27.43	\$14.75	\$16.15	\$0.00	\$58.33
	06/01/2026	\$28.02	\$14.75	\$16.15	\$0.00	\$58.92
	12/01/2026	\$28.69	\$14.75	\$16.15	\$0.00	\$59.59
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

OILER (TRUCK CRANES, GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$29.67	\$14.75	\$16.15	\$0.00	\$60.57
	12/01/2023	\$30.36	\$14.75	\$16.15	\$0.00	\$61.26
	06/01/2024	\$31.08	\$14.75	\$16.15	\$0.00	\$61.98
	12/01/2024	\$31.88	\$14.75	\$16.15	\$0.00	\$62.78
	06/01/2025	\$32.60	\$14.75	\$16.15	\$0.00	\$63.50
	12/01/2025	\$33.40	\$14.75	\$16.15	\$0.00	\$64.30
	06/01/2026	\$34.12	\$14.75	\$16.15	\$0.00	\$65.02
	12/01/2026	\$34.92	\$14.75	\$16.15	\$0.00	\$65.82
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
OTHER POWER DRIVEN EQUIPMENT - CLASS II <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$53.69	\$14.75	\$16.15	\$0.00	\$84.59
	12/01/2023	\$54.93	\$14.75	\$16.15	\$0.00	\$85.83
	06/01/2024	\$56.21	\$14.75	\$16.15	\$0.00	\$87.11
	12/01/2024	\$57.65	\$14.75	\$16.15	\$0.00	\$88.55
	06/01/2025	\$58.93	\$14.75	\$16.15	\$0.00	\$89.83
	12/01/2025	\$60.37	\$14.75	\$16.15	\$0.00	\$91.27
	06/01/2026	\$61.65	\$14.75	\$16.15	\$0.00	\$92.55
	12/01/2026	\$63.09	\$14.75	\$16.15	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

PAINTER (BRIDGES/TANKS) <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2023	\$55.51	\$9.65	\$23.70	\$0.00	\$88.86
	01/01/2024	\$56.06	\$9.95	\$23.95	\$0.00	\$89.96
	07/01/2024	\$57.26	\$9.95	\$23.95	\$0.00	\$91.16
	01/01/2025	\$58.46	\$9.95	\$23.95	\$0.00	\$92.36

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

Effective Date - 07/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.76	\$9.65	\$0.00	\$0.00	\$37.41
2	55	\$30.53	\$9.65	\$6.55	\$0.00	\$46.73
3	60	\$33.31	\$9.65	\$7.14	\$0.00	\$50.10
4	65	\$36.08	\$9.65	\$7.74	\$0.00	\$53.47
5	70	\$38.86	\$9.65	\$20.13	\$0.00	\$68.64
6	75	\$41.63	\$9.65	\$20.73	\$0.00	\$72.01
7	80	\$44.41	\$9.65	\$21.32	\$0.00	\$75.38
8	90	\$49.96	\$9.65	\$22.51	\$0.00	\$82.12

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.03	\$9.95	\$0.00	\$0.00	\$37.98
2	55	\$30.83	\$9.95	\$6.66	\$0.00	\$47.44
3	60	\$33.64	\$9.95	\$7.26	\$0.00	\$50.85
4	65	\$36.44	\$9.95	\$7.87	\$0.00	\$54.26
5	70	\$39.24	\$9.95	\$20.32	\$0.00	\$69.51
6	75	\$42.05	\$9.95	\$20.93	\$0.00	\$72.93
7	80	\$44.85	\$9.95	\$21.53	\$0.00	\$76.33
8	90	\$50.45	\$9.95	\$22.74	\$0.00	\$83.14

#### Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) * * If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2023	\$46.41	\$9.65	\$23.70	\$0.00	\$79.76
	01/01/2024	\$46.96	\$9.95	\$23.95	\$0.00	\$80.86
	07/01/2024	\$48.16	\$9.95	\$23.95	\$0.00	\$82.06
	01/01/2025	\$49.36	\$9.95	\$23.95	\$0.00	\$83.26

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

Effective Date - 07/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.21	\$9.65	\$0.00	\$0.00	\$32.86
2	55	\$25.53	\$9.65	\$6.55	\$0.00	\$41.73
3	60	\$27.85	\$9.65	\$7.14	\$0.00	\$44.64
4	65	\$30.17	\$9.65	\$7.74	\$0.00	\$47.56
5	70	\$32.49	\$9.65	\$20.13	\$0.00	\$62.27
6	75	\$34.81	\$9.65	\$20.73	\$0.00	\$65.19
7	80	\$37.13	\$9.65	\$21.32	\$0.00	\$68.10
8	90	\$41.77	\$8.65	\$22.51	\$0.00	\$72.93

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.48	\$9.95	\$0.00	\$0.00	\$33.43
2	55	\$25.83	\$9.95	\$6.66	\$0.00	\$42.44
3	60	\$28.18	\$9.95	\$7.26	\$0.00	\$45.39
4	65	\$30.52	\$9.95	\$7.87	\$0.00	\$48.34
5	70	\$32.87	\$9.95	\$20.32	\$0.00	\$63.14
6	75	\$35.22	\$9.95	\$20.93	\$0.00	\$66.10
7	80	\$37.57	\$9.95	\$21.53	\$0.00	\$69.05
8	90	\$42.26	\$9.95	\$22.74	\$0.00	\$74.95

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT)	07/01/2023	\$44.47	\$9.65	\$23.70	\$0.00	\$77.82
PAINTERS LOCAL 35 - ZONE 2	01/01/2024	\$45.02	\$9.95	\$23.95	\$0.00	\$78.92
	07/01/2024	\$46.22	\$9.95	\$23.95	\$0.00	\$80.12
	01/01/2025	\$47.42	\$9.95	\$23.95	\$0.00	\$81.32

**Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint****Effective Date - 07/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.24	\$9.65	\$0.00	\$0.00	\$31.89
2	55	\$24.46	\$9.65	\$6.55	\$0.00	\$40.66
3	60	\$26.68	\$9.65	\$7.14	\$0.00	\$43.47
4	65	\$28.91	\$9.65	\$7.74	\$0.00	\$46.30
5	70	\$31.13	\$9.65	\$20.13	\$0.00	\$60.91
6	75	\$33.35	\$9.65	\$20.73	\$0.00	\$63.73
7	80	\$35.58	\$9.65	\$21.32	\$0.00	\$66.55
8	90	\$40.02	\$9.65	\$22.51	\$0.00	\$72.18

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.51	\$9.95	\$0.00	\$0.00	\$32.46
2	55	\$24.76	\$9.95	\$6.66	\$0.00	\$41.37
3	60	\$27.01	\$9.95	\$7.26	\$0.00	\$44.22
4	65	\$29.26	\$9.95	\$7.87	\$0.00	\$47.08
5	70	\$31.51	\$9.95	\$20.32	\$0.00	\$61.78
6	75	\$33.77	\$9.95	\$20.93	\$0.00	\$64.65
7	80	\$36.02	\$9.95	\$21.53	\$0.00	\$67.50
8	90	\$40.52	\$9.95	\$22.74	\$0.00	\$73.21

**Notes:**

Steps are 750 hrs.

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

PAINTER / TAPER (BRUSH, NEW) \*

\* If 30% or more of surfaces to be painted are new construction,  
NEW paint rate shall be used. *PAINTERS LOCAL 35 - ZONE 2*

07/01/2023	\$45.01	\$9.65	\$23.70	\$0.00	\$78.36
01/01/2024	\$45.56	\$9.95	\$23.95	\$0.00	\$79.46
07/01/2024	\$46.76	\$9.95	\$23.95	\$0.00	\$80.66
01/01/2025	\$47.96	\$9.95	\$23.95	\$0.00	\$81.86

Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW

Effective Date - 07/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.51	\$9.65	\$0.00	\$0.00	\$32.16
2	55	\$24.76	\$9.65	\$6.55	\$0.00	\$40.96
3	60	\$27.01	\$9.65	\$7.14	\$0.00	\$43.80
4	65	\$29.26	\$9.65	\$7.74	\$0.00	\$46.65
5	70	\$31.51	\$9.65	\$20.13	\$0.00	\$61.29
6	75	\$33.76	\$9.65	\$20.73	\$0.00	\$64.14
7	80	\$36.01	\$9.65	\$21.32	\$0.00	\$66.98
8	90	\$40.51	\$9.65	\$22.51	\$0.00	\$72.67

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.78	\$9.95	\$0.00	\$0.00	\$32.73
2	55	\$25.06	\$9.95	\$6.66	\$0.00	\$41.67
3	60	\$27.34	\$9.95	\$7.26	\$0.00	\$44.55
4	65	\$29.61	\$9.95	\$7.87	\$0.00	\$47.43
5	70	\$31.89	\$9.95	\$20.32	\$0.00	\$62.16
6	75	\$34.17	\$9.95	\$20.93	\$0.00	\$65.05
7	80	\$36.45	\$9.95	\$21.53	\$0.00	\$67.93
8	90	\$41.00	\$9.95	\$22.74	\$0.00	\$73.69

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)	07/01/2023	\$43.07	\$9.65	\$23.70	\$0.00	\$76.42
PAINTERS LOCAL 35 - ZONE 2	01/01/2024	\$43.62	\$9.95	\$23.95	\$0.00	\$77.52
	07/01/2024	\$44.82	\$9.95	\$23.95	\$0.00	\$78.72
	01/01/2025	\$46.02	\$9.95	\$23.95	\$0.00	\$79.92

Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT

Effective Date - 07/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.54	\$9.65	\$0.00	\$0.00	\$31.19
2	55	\$23.69	\$9.65	\$6.27	\$0.00	\$39.61
3	60	\$25.84	\$9.65	\$6.84	\$0.00	\$42.33
4	65	\$28.00	\$9.65	\$7.41	\$0.00	\$45.06
5	70	\$30.15	\$9.65	\$19.78	\$0.00	\$59.58
6	75	\$32.30	\$9.65	\$20.35	\$0.00	\$62.30
7	80	\$34.46	\$9.65	\$20.92	\$0.00	\$65.03
8	90	\$38.76	\$9.65	\$22.06	\$0.00	\$70.47

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.81	\$9.95	\$0.00	\$0.00	\$31.76
2	55	\$23.99	\$9.95	\$6.66	\$0.00	\$40.60
3	60	\$26.17	\$9.95	\$7.26	\$0.00	\$43.38
4	65	\$28.35	\$9.95	\$7.87	\$0.00	\$46.17
5	70	\$30.53	\$9.95	\$20.32	\$0.00	\$60.80
6	75	\$32.72	\$9.95	\$20.93	\$0.00	\$63.60
7	80	\$34.90	\$9.95	\$21.53	\$0.00	\$66.38
8	90	\$39.26	\$9.95	\$22.74	\$0.00	\$71.95

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY)	06/01/2023	\$37.46	\$9.40	\$16.89	\$0.00	\$63.75
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2023	\$38.36	\$9.40	\$16.89	\$0.00	\$64.65
	06/01/2024	\$39.69	\$9.40	\$16.89	\$0.00	\$65.98
	12/01/2024	\$41.02	\$9.40	\$16.89	\$0.00	\$67.31
	06/01/2025	\$42.41	\$9.40	\$16.89	\$0.00	\$68.70
	12/01/2025	\$43.79	\$9.40	\$16.89	\$0.00	\$70.08
	06/01/2026	\$45.23	\$9.40	\$16.89	\$0.00	\$71.52
	12/01/2026	\$46.67	\$9.40	\$16.89	\$0.00	\$72.96

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PANEL & PICKUP TRUCKS DRIVER <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	06/01/2023	\$38.78	\$14.57	\$17.29	\$0.00	\$70.64
	12/01/2023	\$38.78	\$14.57	\$18.67	\$0.00	\$72.02
	01/01/2024	\$38.78	\$15.07	\$18.67	\$0.00	\$72.52
	06/01/2024	\$39.78	\$15.07	\$18.67	\$0.00	\$73.52
	12/01/2024	\$39.78	\$15.07	\$20.17	\$0.00	\$75.02
	01/01/2025	\$39.78	\$15.57	\$20.17	\$0.00	\$75.52
	06/01/2025	\$40.78	\$15.57	\$20.17	\$0.00	\$76.52
	12/01/2025	\$40.78	\$15.57	\$21.78	\$0.00	\$78.13
	01/01/2026	\$40.78	\$16.17	\$21.78	\$0.00	\$78.73
	06/01/2026	\$41.78	\$16.17	\$21.78	\$0.00	\$79.73
	12/01/2026	\$41.78	\$16.17	\$23.52	\$0.00	\$81.47
	01/01/2027	\$41.78	\$16.77	\$23.52	\$0.00	\$82.07
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i> For apprentice rates see "Apprentice- PILE DRIVER"	08/01/2020	\$46.11	\$9.40	\$23.12	\$0.00	\$78.63
PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$46.11	\$9.40	\$23.12	\$0.00	\$78.63

**Apprentice - PILE DRIVER - Local 56 Zone 2**

**Effective Date - 08/01/2020**

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

**Notes:** Apprentice wages shall be no less than the following Steps;  
(Same as set in Zone 1)

1\$57.06/2\$61.96/3\$66.87/4\$69.32/5\$71.78/6\$71.78/7\$76.68/8\$76.68

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

PIPELAYER <i>LABORERS - ZONE 2</i>	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
	For apprentice rates see "Apprentice- LABORER"					
PIPELAYER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
	06/01/2024	\$39.94	\$9.40	\$16.89	\$0.00	\$66.23
	12/01/2024	\$41.27	\$9.40	\$16.89	\$0.00	\$67.56
	06/01/2025	\$42.66	\$9.40	\$16.89	\$0.00	\$68.95
	12/01/2025	\$44.04	\$9.40	\$16.89	\$0.00	\$70.33
	06/01/2026	\$45.48	\$9.40	\$16.89	\$0.00	\$71.77
	12/01/2026	\$46.92	\$9.40	\$16.89	\$0.00	\$73.21
	For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"					
PLUMBER & PIPEFITTER <i>PLUMBERS LOCAL 4</i>	09/01/2023	\$52.55	\$9.90	\$17.42	\$0.00	\$79.87
	03/01/2024	\$53.95	\$9.90	\$17.42	\$0.00	\$81.27
	09/01/2024	\$55.35	\$9.90	\$17.42	\$0.00	\$82.67
	03/01/2025	\$56.75	\$9.90	\$17.42	\$0.00	\$84.07
	09/01/2025	\$58.15	\$9.90	\$17.42	\$0.00	\$85.47
	03/01/2026	\$59.55	\$9.90	\$17.42	\$0.00	\$86.87

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - PLUMBER/PIPEFITTER - Local 4**

**Effective Date - 09/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$21.02	\$9.90	\$0.00	\$0.00	\$30.92
2	50	\$26.28	\$9.90	\$0.00	\$0.00	\$36.18
3	60	\$31.53	\$9.90	\$0.00	\$0.00	\$41.43
4	70	\$36.79	\$9.90	\$7.71	\$0.00	\$54.40
5	80	\$42.04	\$9.90	\$7.71	\$0.00	\$59.65

**Effective Date - 03/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$21.58	\$9.90	\$0.00	\$0.00	\$31.48
2	50	\$26.98	\$9.90	\$0.00	\$0.00	\$36.88
3	60	\$32.37	\$9.90	\$0.00	\$0.00	\$42.27
4	70	\$37.77	\$9.90	\$7.71	\$0.00	\$55.38
5	80	\$43.16	\$9.90	\$7.71	\$0.00	\$60.77

**Notes:**

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

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

PNEUMATIC CONTROLS (TEMP.) PLUMBERS LOCAL 4	09/01/2023	\$52.55	\$9.90	\$17.42	\$0.00	\$79.87
	03/01/2024	\$53.95	\$9.90	\$17.42	\$0.00	\$81.27
	09/01/2024	\$55.35	\$9.90	\$17.42	\$0.00	\$82.67
	03/01/2025	\$56.75	\$9.90	\$17.42	\$0.00	\$84.07
	09/01/2025	\$58.15	\$9.90	\$17.42	\$0.00	\$85.47
	03/01/2026	\$59.55	\$9.90	\$17.42	\$0.00	\$86.87
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
PNEUMATIC DRILL/TOOL OPERATOR LABORERS - ZONE 2	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
	06/01/2024	\$39.94	\$9.40	\$16.89	\$0.00	\$66.23
	12/01/2024	\$41.27	\$9.40	\$16.89	\$0.00	\$67.56
	06/01/2025	\$42.66	\$9.40	\$16.89	\$0.00	\$68.95
	12/01/2025	\$44.04	\$9.40	\$16.89	\$0.00	\$70.33
	06/01/2026	\$45.48	\$9.40	\$16.89	\$0.00	\$71.77
	12/01/2026	\$46.92	\$9.40	\$16.89	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
POWDERMAN & BLASTER LABORERS - ZONE 2	06/01/2023	\$38.46	\$9.40	\$16.89	\$0.00	\$64.75
	12/01/2023	\$39.36	\$9.40	\$16.89	\$0.00	\$65.65
For apprentice rates see "Apprentice- LABORER"						



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2023	\$38.46	\$9.40	\$16.89	\$0.00	\$64.75
	12/01/2023	\$39.36	\$9.40	\$16.89	\$0.00	\$65.65
	06/01/2024	\$40.69	\$9.40	\$16.89	\$0.00	\$66.98
	12/01/2024	\$42.02	\$9.40	\$16.89	\$0.00	\$68.31
	06/01/2025	\$43.41	\$9.40	\$16.89	\$0.00	\$69.70
	12/01/2025	\$44.79	\$9.40	\$16.89	\$0.00	\$71.08
	06/01/2026	\$46.23	\$9.40	\$16.89	\$0.00	\$72.52
	12/01/2026	\$47.67	\$9.40	\$16.89	\$0.00	\$73.96
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$54.28	\$14.75	\$16.15	\$0.00	\$85.18
	12/01/2023	\$55.53	\$14.75	\$16.15	\$0.00	\$86.43
	06/01/2024	\$56.83	\$14.75	\$16.15	\$0.00	\$87.73
	12/01/2024	\$58.28	\$14.75	\$16.15	\$0.00	\$89.18
	06/01/2025	\$59.58	\$14.75	\$16.15	\$0.00	\$90.48
	12/01/2025	\$61.03	\$14.75	\$16.15	\$0.00	\$91.93
	06/01/2026	\$62.33	\$14.75	\$16.15	\$0.00	\$93.23
	12/01/2026	\$63.78	\$14.75	\$16.15	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$54.28	\$14.75	\$16.15	\$0.00	\$85.18
	12/01/2023	\$55.53	\$14.75	\$16.15	\$0.00	\$86.43
	06/01/2024	\$56.83	\$14.75	\$16.15	\$0.00	\$87.73
	12/01/2024	\$58.28	\$14.75	\$16.15	\$0.00	\$89.18
	06/01/2025	\$59.58	\$14.75	\$16.15	\$0.00	\$90.48
	12/01/2025	\$61.03	\$14.75	\$16.15	\$0.00	\$91.93
	06/01/2026	\$62.33	\$14.75	\$16.15	\$0.00	\$93.23
	12/01/2026	\$63.78	\$14.75	\$16.15	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$35.30	\$14.75	\$16.15	\$0.00	\$66.20
	12/01/2023	\$36.12	\$14.75	\$16.15	\$0.00	\$67.02
	06/01/2024	\$36.97	\$14.75	\$16.15	\$0.00	\$67.87
	12/01/2024	\$37.92	\$14.75	\$16.15	\$0.00	\$68.82
	06/01/2025	\$38.77	\$14.75	\$16.15	\$0.00	\$69.67
	12/01/2025	\$39.72	\$14.75	\$16.15	\$0.00	\$70.62
	06/01/2026	\$40.58	\$14.75	\$16.15	\$0.00	\$71.48
	12/01/2026	\$41.53	\$14.75	\$16.15	\$0.00	\$72.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 170 - Dauphinis (Bellingham)</i>	01/01/2023	\$26.40	\$10.26	\$4.75	\$0.00	\$41.41
	12/01/2023	\$27.00	\$10.76	\$5.45	\$0.00	\$43.21
	01/01/2024	\$27.00	\$10.76	\$5.45	\$0.00	\$43.21
	12/01/2024	\$27.60	\$11.26	\$6.15	\$0.00	\$45.01
	01/01/2025	\$27.60	\$11.26	\$6.15	\$0.00	\$45.01

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
RECLAIMERS	06/01/2023	\$53.69	\$14.75	\$16.15	\$0.00	\$84.59
OPERATING ENGINEERS LOCAL 4	12/01/2023	\$54.93	\$14.75	\$16.15	\$0.00	\$85.83
	06/01/2024	\$56.21	\$14.75	\$16.15	\$0.00	\$87.11
	12/01/2024	\$57.65	\$14.75	\$16.15	\$0.00	\$88.55
	06/01/2025	\$58.93	\$14.75	\$16.15	\$0.00	\$89.83
	12/01/2025	\$60.37	\$14.75	\$16.15	\$0.00	\$91.27
	06/01/2026	\$61.65	\$14.75	\$16.15	\$0.00	\$92.55
	12/01/2026	\$63.09	\$14.75	\$16.15	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RIDE-ON MOTORIZED BUGGY OPERATOR	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
LABORERS - ZONE 2	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
ROLLER/SPREADER/MULCHING MACHINE	06/01/2023	\$53.69	\$14.75	\$16.15	\$0.00	\$84.59
OPERATING ENGINEERS LOCAL 4	12/01/2023	\$54.93	\$14.75	\$16.15	\$0.00	\$85.83
	06/01/2024	\$56.21	\$14.75	\$16.15	\$0.00	\$87.11
	12/01/2024	\$57.65	\$14.75	\$16.15	\$0.00	\$88.55
	06/01/2025	\$58.93	\$14.75	\$16.15	\$0.00	\$89.83
	12/01/2025	\$60.37	\$14.75	\$16.15	\$0.00	\$91.27
	06/01/2026	\$61.65	\$14.75	\$16.15	\$0.00	\$92.55
	12/01/2026	\$63.09	\$14.75	\$16.15	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROOFER (Inc.Roofer Waterproofing &Roofer Damproofg)	08/01/2023	\$50.03	\$12.78	\$20.20	\$0.00	\$83.01
ROOFERS LOCAL 33	02/01/2024	\$51.28	\$12.78	\$20.20	\$0.00	\$84.26
	08/01/2024	\$52.78	\$12.78	\$20.20	\$0.00	\$85.76
	02/01/2025	\$54.03	\$12.78	\$20.20	\$0.00	\$87.01
	08/01/2025	\$55.53	\$12.78	\$20.20	\$0.00	\$88.51
	02/01/2026	\$56.78	\$12.78	\$20.20	\$0.00	\$89.76

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - ROOFER - Local 33**

**Effective Date -** 08/01/2023

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

**Effective Date -** 02/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.64	\$12.78	\$5.59	\$0.00	\$44.01
2	60	\$30.77	\$12.78	\$20.20	\$0.00	\$63.75
3	65	\$33.33	\$12.78	\$20.20	\$0.00	\$66.31
4	75	\$38.46	\$12.78	\$20.20	\$0.00	\$71.44
5	85	\$43.59	\$12.78	\$20.20	\$0.00	\$76.57

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

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

ROOFER SLATE / TILE / PRECAST CONCRETE	08/01/2023	\$50.28	\$12.78	\$20.20	\$0.00	\$83.26
ROOFERS LOCAL 33	02/01/2024	\$51.53	\$12.78	\$20.20	\$0.00	\$84.51
	08/01/2024	\$53.03	\$12.78	\$20.20	\$0.00	\$86.01
	02/01/2025	\$54.28	\$12.78	\$20.20	\$0.00	\$87.26
	08/01/2025	\$55.78	\$12.78	\$20.20	\$0.00	\$88.76
	02/01/2026	\$57.03	\$12.78	\$20.20	\$0.00	\$90.01
For apprentice rates see "Apprentice- ROOFER"						
SHEETMETAL WORKER	07/01/2023	\$42.55	\$10.64	\$17.54	\$2.05	\$72.78
SHEETMETAL WORKERS LOCAL 63	01/01/2024	\$43.80	\$10.64	\$17.54	\$2.05	\$74.03
	07/01/2024	\$45.05	\$10.64	\$17.54	\$2.05	\$75.28
	01/01/2025	\$46.30	\$10.64	\$17.54	\$2.05	\$76.53

Apprentice - SHEET METAL WORKER - Local 63

Effective Date - 07/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$19.15	\$4.79	\$4.76	\$0.92	\$29.62
2	50	\$21.28	\$5.32	\$5.29	\$1.03	\$32.92
3	55	\$23.40	\$5.85	\$5.82	\$1.13	\$36.20
4	60	\$25.53	\$6.38	\$6.35	\$1.23	\$39.49
5	65	\$27.66	\$6.92	\$6.88	\$1.33	\$42.79
6	70	\$29.79	\$7.45	\$7.41	\$1.44	\$46.09
7	75	\$31.91	\$7.98	\$7.94	\$1.54	\$49.37
8	80	\$34.04	\$8.51	\$15.42	\$1.64	\$59.61
9	85	\$36.17	\$9.04	\$15.95	\$1.74	\$62.90
10	90	\$38.30	\$9.58	\$16.48	\$1.85	\$66.21

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$19.71	\$4.79	\$4.76	\$0.92	\$30.18
2	50	\$21.90	\$5.32	\$5.29	\$1.03	\$33.54
3	55	\$24.09	\$5.85	\$5.82	\$1.13	\$36.89
4	60	\$26.28	\$6.38	\$6.35	\$1.23	\$40.24
5	65	\$28.47	\$6.92	\$6.88	\$1.33	\$43.60
6	70	\$30.66	\$7.45	\$7.41	\$1.44	\$46.96
7	75	\$32.85	\$7.98	\$7.94	\$1.54	\$50.31
8	80	\$35.04	\$8.51	\$15.42	\$1.64	\$60.61
9	85	\$37.23	\$9.04	\$15.95	\$1.74	\$63.96
10	90	\$39.42	\$9.58	\$13.92	\$1.85	\$64.77

Notes:

Apprentice to Journeyworker Ratio:1:3

SPECIALIZED EARTH MOVING EQUIP < 35 TONS	06/01/2023	\$39.24	\$14.57	\$17.29	\$0.00	\$71.10
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/01/2023	\$39.24	\$14.57	\$18.67	\$0.00	\$72.48
	01/01/2024	\$39.24	\$15.07	\$18.67	\$0.00	\$72.98
	06/01/2024	\$40.24	\$15.07	\$18.67	\$0.00	\$73.98
	12/01/2024	\$40.24	\$15.07	\$20.17	\$0.00	\$75.48
	01/01/2025	\$40.24	\$15.57	\$20.17	\$0.00	\$75.98
	06/01/2025	\$41.24	\$15.57	\$20.17	\$0.00	\$76.98
	12/01/2025	\$41.24	\$15.57	\$21.78	\$0.00	\$78.59
	01/01/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$79.19
	06/01/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$80.19
	12/01/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$81.93
	01/01/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$82.53

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	06/01/2023	\$39.53	\$14.57	\$17.29	\$0.00	\$71.39
	12/01/2023	\$39.53	\$14.57	\$18.67	\$0.00	\$72.77
	01/01/2024	\$39.53	\$15.07	\$18.67	\$0.00	\$73.27
	06/01/2024	\$40.53	\$15.07	\$18.67	\$0.00	\$74.27
	12/01/2024	\$40.53	\$15.07	\$20.17	\$0.00	\$75.77
	01/01/2025	\$40.53	\$15.57	\$20.17	\$0.00	\$76.27
	06/01/2025	\$41.53	\$15.57	\$20.17	\$0.00	\$77.27
	12/01/2025	\$41.53	\$15.57	\$21.78	\$0.00	\$78.88
	01/01/2026	\$41.53	\$16.17	\$21.78	\$0.00	\$79.48
	06/01/2026	\$42.53	\$16.17	\$21.78	\$0.00	\$80.48
	12/01/2026	\$42.53	\$16.17	\$23.52	\$0.00	\$82.22
	01/01/2027	\$42.53	\$16.77	\$23.52	\$0.00	\$82.82
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 669</i>	04/01/2023	\$47.43	\$11.45	\$16.61	\$0.00	\$75.49

**Apprentice - SPRINKLER FITTER - Local 669**

**Effective Date - 04/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$21.34	\$8.22	\$0.00	\$0.00	\$29.56
2	50	\$23.72	\$8.22	\$0.00	\$0.00	\$31.94
3	55	\$26.09	\$11.45	\$7.20	\$0.00	\$44.74
4	60	\$28.46	\$11.45	\$8.35	\$0.00	\$48.26
5	65	\$30.83	\$11.45	\$8.35	\$0.00	\$50.63
6	70	\$33.20	\$11.45	\$8.60	\$0.00	\$53.25
7	75	\$35.57	\$11.45	\$8.60	\$0.00	\$55.62
8	80	\$37.94	\$11.45	\$8.60	\$0.00	\$57.99
9	85	\$40.32	\$11.45	\$8.60	\$0.00	\$60.37
10	90	\$42.69	\$11.45	\$8.60	\$0.00	\$62.74

**Notes:**

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

STEAM BOILER OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$53.69	\$14.75	\$16.15	\$0.00	\$84.59
	12/01/2023	\$54.93	\$14.75	\$16.15	\$0.00	\$85.83
	06/01/2024	\$56.21	\$14.75	\$16.15	\$0.00	\$87.11
	12/01/2024	\$57.65	\$14.75	\$16.15	\$0.00	\$88.55
	06/01/2025	\$58.93	\$14.75	\$16.15	\$0.00	\$89.83
	12/01/2025	\$60.37	\$14.75	\$16.15	\$0.00	\$91.27
	06/01/2026	\$61.65	\$14.75	\$16.15	\$0.00	\$92.55
	12/01/2026	\$63.09	\$14.75	\$16.15	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$53.69	\$14.75	\$16.15	\$0.00	\$84.59
	12/01/2023	\$54.93	\$14.75	\$16.15	\$0.00	\$85.83
	06/01/2024	\$56.21	\$14.75	\$16.15	\$0.00	\$87.11
	12/01/2024	\$57.65	\$14.75	\$16.15	\$0.00	\$88.55
	06/01/2025	\$58.93	\$14.75	\$16.15	\$0.00	\$89.83
	12/01/2025	\$60.37	\$14.75	\$16.15	\$0.00	\$91.27
	06/01/2026	\$61.65	\$14.75	\$16.15	\$0.00	\$92.55
	12/01/2026	\$63.09	\$14.75	\$16.15	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	08/01/2023	\$61.34	\$11.49	\$22.34	\$0.00	\$95.17
	02/01/2024	\$62.59	\$11.49	\$22.34	\$0.00	\$96.42
	08/01/2024	\$64.69	\$11.49	\$22.34	\$0.00	\$98.52
	02/01/2025	\$65.99	\$11.49	\$22.34	\$0.00	\$99.82
	08/01/2025	\$68.14	\$11.49	\$22.34	\$0.00	\$101.97
	02/01/2026	\$69.49	\$11.49	\$22.34	\$0.00	\$103.32
	08/01/2026	\$71.69	\$11.49	\$22.34	\$0.00	\$105.52
	02/01/2027	\$73.09	\$11.49	\$22.34	\$0.00	\$106.92

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

Effective Date - 08/01/2023

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

Effective Date - 02/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.30	\$11.49	\$22.34	\$0.00	\$65.13
2	60	\$37.55	\$11.49	\$22.34	\$0.00	\$71.38
3	70	\$43.81	\$11.49	\$22.34	\$0.00	\$77.64
4	80	\$50.07	\$11.49	\$22.34	\$0.00	\$83.90
5	90	\$56.33	\$11.49	\$22.34	\$0.00	\$90.16

Notes:

Apprentice to Journeyworker Ratio:1:3

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2023	\$47.58	\$9.40	\$17.97	\$0.00	\$74.95
	12/01/2023	\$48.83	\$9.40	\$17.97	\$0.00	\$76.20
	06/01/2024	\$50.31	\$9.40	\$17.97	\$0.00	\$77.68
	12/01/2024	\$51.78	\$9.40	\$17.97	\$0.00	\$79.15
	06/01/2025	\$53.28	\$9.40	\$17.97	\$0.00	\$80.65
	12/01/2025	\$54.78	\$9.40	\$17.97	\$0.00	\$82.15
	06/01/2026	\$56.33	\$9.40	\$17.97	\$0.00	\$83.70
	12/01/2026	\$57.83	\$9.40	\$17.97	\$0.00	\$85.20
For apprentice rates see "Apprentice- LABORER"						
TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2023	\$43.70	\$9.40	\$17.97	\$0.00	\$71.07
	12/01/2023	\$44.95	\$9.40	\$17.97	\$0.00	\$72.32
	06/01/2024	\$46.43	\$9.40	\$17.97	\$0.00	\$73.80
	12/01/2024	\$47.90	\$9.40	\$17.97	\$0.00	\$75.27
	06/01/2025	\$49.40	\$9.40	\$17.97	\$0.00	\$76.77
	12/01/2025	\$50.90	\$9.40	\$17.97	\$0.00	\$78.27
	06/01/2026	\$52.45	\$9.40	\$17.97	\$0.00	\$79.82
	12/01/2026	\$53.95	\$9.40	\$17.97	\$0.00	\$81.32
For apprentice rates see "Apprentice- LABORER"						
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2023	\$43.58	\$9.40	\$17.97	\$0.00	\$70.95
	12/01/2023	\$44.83	\$9.40	\$17.97	\$0.00	\$72.20
	06/01/2024	\$46.31	\$9.40	\$17.97	\$0.00	\$73.68
	12/01/2024	\$47.78	\$9.40	\$17.97	\$0.00	\$75.15
	06/01/2025	\$49.28	\$9.40	\$17.97	\$0.00	\$76.65
	12/01/2025	\$50.78	\$9.40	\$17.97	\$0.00	\$78.15
	06/01/2026	\$52.33	\$9.40	\$17.97	\$0.00	\$79.70
	12/01/2026	\$53.83	\$9.40	\$17.97	\$0.00	\$81.20
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$53.69	\$14.75	\$16.15	\$0.00	\$84.59
	12/01/2023	\$54.93	\$14.75	\$16.15	\$0.00	\$85.83
	06/01/2024	\$56.21	\$14.75	\$16.15	\$0.00	\$87.11
	12/01/2024	\$57.65	\$14.75	\$16.15	\$0.00	\$88.55
	06/01/2025	\$58.93	\$14.75	\$16.15	\$0.00	\$89.83
	12/01/2025	\$60.37	\$14.75	\$16.15	\$0.00	\$91.27
	06/01/2026	\$61.65	\$14.75	\$16.15	\$0.00	\$92.55
	12/01/2026	\$63.09	\$14.75	\$16.15	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	06/01/2023	\$39.82	\$14.57	\$17.29	\$0.00	\$71.68
	12/01/2023	\$39.82	\$14.57	\$18.67	\$0.00	\$73.06
	01/01/2024	\$39.82	\$15.07	\$18.67	\$0.00	\$73.56
	06/01/2024	\$40.82	\$15.07	\$18.67	\$0.00	\$74.56
	12/01/2024	\$40.82	\$15.07	\$20.17	\$0.00	\$76.06
	01/01/2025	\$40.82	\$15.57	\$20.17	\$0.00	\$76.56
	06/01/2025	\$41.82	\$15.57	\$20.17	\$0.00	\$77.56
	12/01/2025	\$41.82	\$15.57	\$21.78	\$0.00	\$79.17
	01/01/2026	\$41.82	\$16.17	\$21.78	\$0.00	\$79.77
	06/01/2026	\$42.82	\$16.17	\$21.78	\$0.00	\$80.77
	12/01/2026	\$42.82	\$16.17	\$23.52	\$0.00	\$82.51
	01/01/2027	\$42.82	\$16.77	\$23.52	\$0.00	\$83.11
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	06/01/2023	\$55.81	\$9.40	\$18.42	\$0.00	\$83.63
	12/01/2023	\$57.06	\$9.40	\$18.42	\$0.00	\$84.88
	06/01/2024	\$58.54	\$9.40	\$18.42	\$0.00	\$86.36
	12/01/2024	\$60.01	\$9.40	\$18.42	\$0.00	\$87.83
	06/01/2025	\$61.51	\$9.40	\$18.42	\$0.00	\$89.33
	12/01/2025	\$63.01	\$9.40	\$18.42	\$0.00	\$90.83
	06/01/2026	\$64.56	\$9.40	\$18.42	\$0.00	\$92.38
	12/01/2026	\$66.06	\$9.40	\$18.42	\$0.00	\$93.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	06/01/2023	\$57.81	\$9.40	\$18.42	\$0.00	\$85.63
	12/01/2023	\$59.06	\$9.40	\$18.42	\$0.00	\$86.88
	06/01/2024	\$60.54	\$9.40	\$18.42	\$0.00	\$88.36
	12/01/2024	\$62.01	\$9.40	\$18.42	\$0.00	\$89.83
	06/01/2025	\$63.51	\$9.40	\$18.42	\$0.00	\$91.33
	12/01/2025	\$65.01	\$9.40	\$18.42	\$0.00	\$92.83
	06/01/2026	\$66.56	\$9.40	\$18.42	\$0.00	\$94.38
	12/01/2026	\$68.06	\$9.40	\$18.42	\$0.00	\$95.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2023	\$47.88	\$9.40	\$18.42	\$0.00	\$75.70
	12/01/2023	\$49.13	\$9.40	\$18.42	\$0.00	\$76.95
	06/01/2024	\$50.61	\$9.40	\$18.42	\$0.00	\$78.43
	12/01/2024	\$52.08	\$9.40	\$18.42	\$0.00	\$79.90
	06/01/2025	\$53.58	\$9.40	\$18.42	\$0.00	\$81.40
	12/01/2025	\$55.08	\$9.40	\$18.42	\$0.00	\$82.90
	06/01/2026	\$56.63	\$9.40	\$18.42	\$0.00	\$84.45
	12/01/2026	\$58.13	\$9.40	\$18.42	\$0.00	\$85.95
For apprentice rates see "Apprentice- LABORER"						



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TUNNEL WORK - FREE AIR (HAZ. WASTE)	06/01/2023	\$49.88	\$9.40	\$18.42	\$0.00	\$77.70
LABORERS (FREE AIR TUNNEL)	12/01/2023	\$51.13	\$9.40	\$18.42	\$0.00	\$78.95
	06/01/2024	\$52.61	\$9.40	\$18.42	\$0.00	\$80.43
	12/01/2024	\$54.08	\$9.40	\$18.42	\$0.00	\$81.90
	06/01/2025	\$55.58	\$9.40	\$18.42	\$0.00	\$83.40
	12/01/2025	\$57.08	\$9.40	\$18.42	\$0.00	\$84.90
	06/01/2026	\$58.63	\$9.40	\$18.42	\$0.00	\$86.45
	12/01/2026	\$60.13	\$9.40	\$18.42	\$0.00	\$87.95
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL	06/01/2023	\$39.24	\$14.57	\$17.29	\$0.00	\$71.10
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/01/2023	\$39.24	\$14.57	\$18.67	\$0.00	\$72.48
	01/01/2024	\$39.24	\$15.07	\$18.67	\$0.00	\$72.98
	06/01/2024	\$40.24	\$15.07	\$18.67	\$0.00	\$73.98
	12/01/2024	\$40.24	\$15.07	\$20.17	\$0.00	\$75.48
	01/01/2025	\$40.24	\$15.57	\$20.17	\$0.00	\$75.98
	06/01/2025	\$41.24	\$15.57	\$20.17	\$0.00	\$76.98
	12/01/2025	\$41.24	\$15.57	\$21.78	\$0.00	\$78.59
	01/01/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$79.19
	06/01/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$80.19
	12/01/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$81.93
	01/01/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$82.53
VOICE-DATA-VIDEO TECHNICIAN	09/03/2023	\$34.49	\$13.00	\$17.22	\$0.00	\$64.71
ELECTRICIANS LOCAL 96	09/01/2024	\$35.29	\$13.99	\$17.57	\$0.00	\$66.85
	09/07/2025	\$36.12	\$14.98	\$17.91	\$0.00	\$69.01
	09/06/2026	\$37.04	\$15.96	\$18.27	\$0.00	\$71.27

Apprentice - VOICE-DATA-VIDEO TECHNICIAN - Local 96

Effective Date - 09/03/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.25	\$13.00	\$4.31	\$0.00	\$34.56
2	55	\$18.97	\$13.00	\$4.36	\$0.00	\$36.33
3	60	\$20.69	\$13.00	\$16.81	\$0.00	\$50.50
4	65	\$22.42	\$13.00	\$16.86	\$0.00	\$52.28
5	70	\$24.14	\$13.00	\$16.91	\$0.00	\$54.05
6	75	\$25.87	\$13.00	\$16.97	\$0.00	\$55.84
7	80	\$27.59	\$13.00	\$17.02	\$0.00	\$57.61
8	85	\$29.32	\$13.00	\$17.07	\$0.00	\$59.39

Effective Date - 09/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.65	\$13.99	\$4.41	\$0.00	\$36.05
2	55	\$19.41	\$13.99	\$4.46	\$0.00	\$37.86
3	60	\$21.17	\$13.99	\$17.15	\$0.00	\$52.31
4	65	\$22.94	\$13.99	\$17.20	\$0.00	\$54.13
5	70	\$24.70	\$13.99	\$17.25	\$0.00	\$55.94
6	75	\$26.47	\$13.99	\$17.30	\$0.00	\$57.76
7	80	\$28.23	\$13.99	\$17.36	\$0.00	\$59.58
8	85	\$30.00	\$13.99	\$17.41	\$0.00	\$61.40

Notes:

Apprentice to Journeyworker Ratio:1:1

WAGON DRILL OPERATOR	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
LABORERS - ZONE 2	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
WAGON DRILL OPERATOR (HEAVY & HIGHWAY)	06/01/2023	\$37.71	\$9.40	\$16.89	\$0.00	\$64.00
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2023	\$38.61	\$9.40	\$16.89	\$0.00	\$64.90
	06/01/2024	\$39.94	\$9.40	\$16.89	\$0.00	\$66.23
	12/01/2024	\$41.27	\$9.40	\$16.89	\$0.00	\$67.56
	06/01/2025	\$42.66	\$9.40	\$16.89	\$0.00	\$68.95
	12/01/2025	\$44.04	\$9.40	\$16.89	\$0.00	\$70.33
	06/01/2026	\$45.48	\$9.40	\$16.89	\$0.00	\$71.77
	12/01/2026	\$46.92	\$9.40	\$16.89	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2023	\$54.28	\$14.75	\$16.15	\$0.00	\$85.18
	12/01/2023	\$55.53	\$14.75	\$16.15	\$0.00	\$86.43
	06/01/2024	\$56.83	\$14.75	\$16.15	\$0.00	\$87.73
	12/01/2024	\$58.28	\$14.75	\$16.15	\$0.00	\$89.18
	06/01/2025	\$59.58	\$14.75	\$16.15	\$0.00	\$90.48
	12/01/2025	\$61.03	\$14.75	\$16.15	\$0.00	\$91.93
	06/01/2026	\$62.33	\$14.75	\$16.15	\$0.00	\$93.23
	12/01/2026	\$63.78	\$14.75	\$16.15	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS LOCAL 4</i>	09/01/2023	\$52.55	\$9.90	\$17.42	\$0.00	\$79.87
	03/01/2024	\$53.95	\$9.90	\$17.42	\$0.00	\$81.27
	09/01/2024	\$55.35	\$9.90	\$17.42	\$0.00	\$82.67
	03/01/2025	\$56.75	\$9.90	\$17.42	\$0.00	\$84.07
	09/01/2025	\$58.15	\$9.90	\$17.42	\$0.00	\$85.47
	03/01/2026	\$59.55	\$9.90	\$17.42	\$0.00	\$86.87
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						

Additional Apprentice Information:

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentice ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, ss. 11E-11L.

All steps are six months (1000 hours.)

Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified.

\*\* Multiple ratios are listed in the comment field.

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

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

## **TECHNICAL SPECIFICATIONS**

SECTION 01010

SUMMARY OF WORK

PART 1 - GENERAL

1.01      GENERAL PROVISIONS

- A.      The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.02      PROJECT IDENTIFICATION AND DESCRIPTION OF WORK

- A.      Project Identification: The name of the Project on Bidding and Contract Documents (Invitation to Bids) is MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE at Millbury Jr/Sr High School, 12 Martin Street, Millbury, Massachusetts 01527 and at Elmwood Street Elementary School, 40 Elmwood Street, Millbury, Massachusetts 01527, BID #0186-2402 for Millbury Public Schools.
- B.      Work of this Contract includes renovations and modifications of doors and door replacements at Millbury Jr./Sr. High School and at Elmwood Street Elementary School.
- C.      All work shall be in accordance with the Bidding and Contract Documents prepared by Architect, DIXON SALO ARCHITECTS, INC., 300 Main Street, First Floor, Worcester, Massachusetts 01608 and their consultants.
- D.      Contract Drawings: Refer to the LIST OF DRAWINGS contained in the the Bidding and Contract Documents.

1.03      WORK OF FILED SUB-TRADES

- A.      Filed Sub-bids: Filed sub-bids are required for this Contract in the following categories:
  - 1.      Painting: Section 09901, PAINTING.
  - 2.      Electrical Work: Section 16101, ELECTRICAL WORK.

1.04      DCAMM CERTIFICATION

- A.      This Contract is subject to DCAMM Certification requirements for General Construction and for Filed Sub-bids.
  - 1.      General Bidder shall be DCAMM certified as a 'Prime Contractor' or a 'Small Prime Contractor' in the following category: 'General Building Construction'.
  - 2.      Filed Sub-bidders shall be DCAMM-certified for the stipulated trade: 'Painting', and 'Electrical Work'.

1.05      PERMIT AND INSPECTION FEES

- A.      All permits and inspection fees shall be paid for by the Contractor.

1.06      CONTRACTOR'S USE OF PREMISES

- A.      Contractor shall limit his use of the premises for Work and for storage, to allow for:

1. Work by other contractors.
2. Owner occupancy.
3. Public use.

B. Coordinate use of premises under direction of Owner.

1. Assume full responsibility for the protection and safekeeping of Products under this Contract, stored on the site.
2. Move any stored Products, under Contractor's control, which interfere with operations of the Owner or separate contractor.
3. Obtain and pay for the use of additional storage or work areas needed for operations.
4. Move any stored Products, under Contractor's control, which interfere with operations of the Owner or separate contractor.

C. Prior to beginning work of the Contract, the General Contractor shall meet with the Owner and the Architect to determine procedures regarding access to and use of site, staging, parking and storage areas, special site conditions and safety issues, and any other restrictions regarding the use of the site areas surrounding the construction.

1.07 EXAMINATION OF SITE AND PREBID CONFERENCE AND WALKTHROUGH

A. Prior to bidding, the General Contractor and each Subcontractors shall carefully examine the site and the Contract Documents to ensure their knowledge of conditions and requirements affecting the work. No claim for extra compensation or extension of time will be allowed for General Contractor's or Subcontractor's failure to comply with this requirement nor will any condition at the site, whether or not in agreement with conditions shown or called for on the Contract Documents, be allowed as a basis or such claims, except as otherwise specifically provided for.

B. Refer to SECTION I - INVITATION FOR BIDS for pre-bid conference.

1.08 ACCEPTABLE WORK HOURS AND COMMENCEMENT AND COMPLETION OF WORK

A. Work Hours: Work hours shall be 6:30 AM to 3:00 P.M, Monday through Friday in particular over School Breaks (Holiday Vacation Period) except for holidays unless approved by Owner.

B. Commencement of Work and Construction Time Frame: The proposed schedule for construction of MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE Project - Contract (Bid #0186-2402) is as follows:

1. Award of Contract: On or about December 15, 2023.
2. Pre-Construction (Off-site) for Shop Drawing review: December 15, 2023 to January 1, 2024.
3. Construction Period On-site: January 1, 2024 to March 5, 2024.
4. Final Completion Date: March 5, 2024.

1.09 LIQUIDATED DAMAGES

A. [Not Applicable].

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01030

ALTERNATES

PART 1 GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 SUMMARY

- A. For each of the alternates Scheduled at the end of this Section, state the amount in the proposal to be added to or subtracted from the Contract Sum for the work.

1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect Work of this Section. Other Specification Sections that directly relate to Work of this Section include, but are not limited to:
  - 1. FORM FOR GENERAL BID.
  - 2. FORM FOR SUB-BID.

1.03 ALTERNATES

- A. Definition: "Alternates" are alternate products, materials, equipment, systems, methods, units of work or major elements of the construction, which may, at the Owner's option and under the terms established by the Contract or Agreement, be selected for the work in lieu of the corresponding requirements of the Contract Documents. Selection may occur prior to the Contract Date, or may, by the Agreement, be deferred for possible selection at a subsequent date.
- B. Alternate Requirements: A Schedule of Alternates is included at the end of this Section. Each alternate is defined using abbreviated language, recognizing that the Contract Documents define the requirements. Coordinate related work to ensure that work affected by each alternate is complete and properly interfaced with work of each selected alternate.
- C. Provide written proposals for each alternate on the Bid Form for Owner's consideration. Each proposal amount shall include the entire cost of the alternate portion of the work including overhead, profit, and other costs including cost of interfacing and coordinating the alternate with related and adjacent work.
- D. Selection of Alternates: Selection of alternates to be included in the work will be in the order of their priority.
- E. Notification: Immediately following award of Contract, prepare and distribute to each entity a notification of status of each alternate. Indicate which alternates have been accepted, rejected, or deferred for consideration at a later date. Include full description of negotiated modifications to alternates, if any.

1.04      DESCRIPTION OF ADD ALTERNATES

A.      The following are Owner-requested Add Alternates; refer to the Specifications and the Drawings.

1.      ADD ALTERNATE #1 - SECURITY EQUIPMENT INSTALLATION - DOOR HS-B6:

State the amount to be added to the Base Bid to add proposed Security Equipment Installation - Door HS-B6 to the Contract, as indicated on the Drawings and as specified herein.

2.      ADD ALTERNATE #2 - SECURITY EQUIPMENT INSTALLATION - DOOR JH-A2:

State the amount to be added to the Base Bid to add proposed Security Equipment Installation - Door JH-A2 to the Contract, as indicated on the Drawings and as specified herein.

3.      ADD ALTERNATE #3 - SECURITY EQUIPMENT INSTALLATION - DOOR JH-C2:

State the amount to be added to the Base Bid to add proposed Security Equipment Installation - Door JH-C2 to the Contract, as indicated on the Drawings and as specified herein.

4.      ADD ALTERNATE #4 - SECURITY EQUIPMENT INSTALLATION - DOOR ES-A3:

State the amount to be added to the Base Bid to add proposed Security Equipment Installation - Door ES-A3 to the Contract, as indicated on the Drawings and as specified herein.

5.      ADD ALTERNATE #5 - SECURITY EQUIPMENT INSTALLATION - DOOR ES-C3:

State the amount to be added to the Base Bid to add proposed Security Equipment Installation - Door ES-C3 to the Contract, as indicated on the Drawings and as specified herein.

6.      ADD ALTERNATE #6 - REPLACEMENT OF DOOR HS-A2; See Drawing A1.1, 1/A-1.1:

State the amount to be added to the Base Bid to add proposed Replacement of Door HS-A2 to the Contract, as indicated on the Drawings and as specified herein. See Drawing A1.1, 1/A-1.1.

PART 2    PRODUCTS

Not Used.

PART 3    EXECUTION

Not Used.

END OF SECTION



SECTION 01035

MODIFICATION PROCEDURES

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements required for handling modifications to the Contract Documents, including, but not limited to:
  - 1. Preliminary procedures.
  - 2. Documentation of proposals and claims.
  - 3. Architect's Supplemental Instructions (ASI).
  - 4. Proposal Request (PR).
  - 5. Construction Change Directive (CCD).
  - 6. Change Order (CO).
  - 7. Request for Information (RFI).

1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
  - 1. CONTRACT and SPECIFICATIONS; Methods of determining cost or credit to Owner resulting from changes in Work made on a time and material basis, and Contractor's claims for additional costs.
  - 2. Section 01300, SUBMITTALS.
  - 3. Section 01700, CONTRACT CLOSEOUT.

1.03 DEFINITIONS

- A. Change Order (CO):
  - 1. Definition: See CONTRACT.
  - 2. Form: AIA Document G701, Change Order.
- B. Construction Change Directive (CCD):
  - 1. Definition: A written order to the Contractor, signed by Owner and Architect which amends the Contract Documents as described, and authorizes Contractor to proceed with a change which affects the Contract Sum or the Contract Time, for inclusion in a subsequent Change Order.
  - 2. Form: AIA Document G714, Construction Change Directive.
- C. Architect's Supplemental Instructions (ASI):
  - 1. Definition: A written order, instructions, or interpretations, signed by Architect making minor changes in the Work not involving a change in Contract Sum or Contract Time.
  - 2. Form: AIA Document G710, Architect's Supplemental Instructions.

D.      Proposal Request (PR):

1.      Definition: A request to the Contractor, signed by the Architect, for submission of an itemized quotation for changes in the Contract Sum or Contract Time. This is not a Change Order or a direction to proceed with the Work.
2.      Form: AIA Document G709, Work Changes Proposal Request.

E.      Request for Information (RFI):

1.      Definition: A request from the Contractor to the Architect soliciting additional information regarding the Contract Documents.
2.      Form: AIA Document G716, Request for Information (RFI).

1.04      PRELIMINARY PROCEDURES

A.      Architect may initiate change by submitting a Work Changes Proposal Request (PR) to Contractor. Request will include:

1.      Detailed description of the Change, Products, and location of the change in the Project.
2.      Supplementary or revised Drawings and Specifications.
3.      The projected time span for making the change and a specific statement as to whether overtime work is, or is not, authorized.
4.      A specific period of time during which the requested price will be considered valid.
5.      Such request is for information only, and is not an instruction to execute the changes, nor to stop Work in progress.

B.      Contractor may initiate changes by submitting a written notice to Architect, containing:

1.      Description of the proposed changes.
2.      Statement of the reason for making the changes.
3.      State of the effect on the Contract Sum and the Contract Time.
4.      Statement of the effect on the work of separate contractors.
5.      Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

1.05      CONSTRUCTION CHANGE AUTHORIZATION

- A.      In lieu of Proposal Request, Architect may issue a Construction Change Directive utilizing form for Contractor to proceed with a change for subsequent inclusion in a Change Order.
- B.      Directive will describe change in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change and will designate the method of determining any change in the Contract Sum and any change in Contract Time.
- C.      Architect will sign and date the Construction Change Directive and send it to the Owner for authorization for the Contractor to proceed with the changes.
- D.      Once authorized by the Owner, the Architect will send the Construction Change Directive to the Contractor. Contractor shall sign and date the Construction Change Directive to indicate agreement with the terms therein.

1.06      DOCUMENTATION OF PROPOSALS AND CLAIMS

- A.      Support each quotation for a lump-sum proposal, and for each unit price which has not previously been established, with sufficient substantiating data to allow Architect to evaluate the quotation.

B. On request provide additional data to support time and cost computations including, but not limited to:

1. Labor required.
2. Equipment required.
3. Products required.
  - a. Recommended source of purchase and unit cost.
  - b. Quantities required.
4. Taxes, insurance, and bonds.
5. Credit for work deleted from Contract, similarly documented.
6. Overhead and profit.
7. Justification for any change in Contract Time.

C. Support each claim for additional costs, and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal, plus additional information:

1. Name of the Owner's authorized agent who ordered the work, and date of the order.
2. Dates and times work was performed, and by whom.
3. Time record, summary of hours worked, and hourly rates paid.
4. Receipts and invoices for:
  - a. Equipment used, listing dates and times of use.
  - b. Products used, listing quantities.
  - c. Subcontracts.

D. Document requests for substitutions for Products as specified in Section 01600, MATERIAL AND EQUIPMENT.

#### 1.07 PREPARATION OF CHANGE ORDERS

A. Unless otherwise indicated, Architect will prepare each Change Order.

B. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.

#### 1.08 LUMP-SUM/FIXED PRICE CHANGE ORDER

A. Content of the Change Orders will be based on either:

1. Architect's Proposal Request and Contractor's responsive Proposal as mutually agreed between Owner and Contractor.
2. Contractor's Proposal for a change, as recommended by Architect.

B. Owner and Architect will sign and date the Change Order as authorization for the Contractor to proceed with the changes.

C. Contractor shall sign and date the Change Order to indicate agreement with the terms therein.

#### 1.09 UNIT PRICE CHANGE ORDER

A. Content of Change Orders will be based on, either:

1. Architect's definition of the scope of the required changes.
2. Contractor's Proposal for a change, as recommended by Architect.
3. Survey of completed Work.

- B. The amounts of the unit prices to be:
    - 1. Those stated in the Agreement.
    - 2. Those mutually agreed upon between Owner and Contractor.
  - C. When quantities of each of the items affected by the Change Order can be determined prior to start of the Work:
    - 1. Owner and Architect will sign and date the Change Order as authorization for Contractor to proceed with the changes.
    - 2. Contractor shall sign and date the Change Order to indicate agreement with the terms therein.
  - D. When quantities of the items cannot be determined prior to start of the Work:
    - 1. Architect and Owner will issue a Construction Change Directive directing Contractor to proceed with the change on the basis of unit prices and will cite the applicable unit prices.
    - 2. At completion of the change, Architect will determine the cost of such work based on the unit prices and quantities used.
      - a. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Contract Time.
    - 3. Architect will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
    - 4. Owner and Contractor will sign and date the Change Order to indicate their agreement with the terms therein.
- 1.10 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/CONSTRUCTION CHANGE DIRECTIVE
- A. Architect and Owner will issue a Construction Change Directive directing Contractor to proceed with the changes.
  - B. At completion of the change, Contractor shall submit itemized accounting and supporting data as provided in the Article "Documentation of Proposals and Claims" of this Section.
  - C. Architect will determine the allowable cost of such work, as provided in Document 00700, GENERAL CONDITIONS and Document 00800, SUPPLEMENTAL GENERAL CONDITIONS.
  - D. Architect will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
  - E. Owner and Contractor will sign and date the Change Order to indicate their agreement therewith.
- 1.11 CORRELATION WITH CONTRACTOR'S SUBMITTALS
- A. Periodically revise Schedule of Values and Request for Payment forms to record each change as a separate item of Work, and to record the adjusted Contract Sum.
  - B. Periodically revise the Construction Progress Schedule to reflect each change in Contract Time.
    - 1. Revise subschedules to show changes for other items of work affected by the changes.
  - C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01040

COORDINATION

PART 1 - GENERAL

1.00      RELATED DOCUMENTS

- A.      The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01      SUMMARY

- A.      This Section specifies supervisory and administrative requirements for coordination of Work, including, but not limited to:
  - 1.      Coordination of work of employees and subcontractors.
  - 2.      Expedition of Work to assure compliance with schedules.
  - 3.      Coordination of Work with that of other contractors and work by Owner.
  - 4.      Compliance with orders and instructions of Architect or Owner.

1.02      RELATED REQUIREMENTS

- A.      Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
  - 1.      CONTRACT and SPECIFICATIONS; Authority and Responsibilities of the Contractor.
  - 2.      Section 01045, CUTTING AND PATCHING.
  - 3.      Section 01200, PROJECT MEETINGS.
  - 4.      Section 01300, SUBMITTALS.
  - 5.      Section 01500, CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS.
  - 6.      Section 01700, CONTRACT CLOSEOUT.

1.03      COORDINATION BY CONTRACTOR

- A.      Coordinate the Work of the Contract, including electrical work and other subcontractors. Anticipate areas where work will be restricted, congested, or difficult. Consult various affected subcontractors.
  - 1.      All work associated with this Contract shall be fully coordinated with the Owner.
  - 2.      Coordinate and comply with requirements regarding use of the building, access, dumpster locations, utilities, and related facilities, as agreed to between the Owner and Contractor.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01045

CUTTING AND PATCHING

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for cutting, fitting, and patching work, including attendant excavation and backfill, required to complete the Work or to:
  - 1. Make its several parts fit together properly.
  - 2. Uncover portions of the Work to provide for installations of ill-timed work.
  - 3. Remove and replace defective work.
  - 4. Remove and replace work not conforming to requirements of Contract Documents.
  - 5. Remove samples of installed work as specified for testing.

1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
  - 1. Section 01010, SUMMARY OF WORK; Description of Project.

1.03 QUALITY ASSURANCE

- A. Permission to patch any items of work does not imply a waiver of the Architect's right to require complete removal and replacement in said areas and of said items if, in Architect's opinion, patching does not satisfactorily restore quality and appearance of work.
- B. Requirements for Structural Work: Do not cut-and-patch structural work in a manner resulting in a reduction of load-carrying capacity or load/deflection ratio.
- C. Operational and Safety Limitations: Do not cut-and-patch operational elements and safety-related components in a manner resulting in a reduction of capacities to perform in the manner intended or resulting in decreased operational life, increased maintenance, or decreased safety.
- D. Visual Requirements: Do not cut-and-patch work that is exposed on exterior or in occupied spaces of building, in a manner resulting in reduction of visual qualities or resulting in substantial evidence of cut-and-patch work, both as judged solely by the Architect. Remove and replace work judged by the Architect to be visually unsatisfactory.

1.04 SUBMITTALS

- A. Submit a written request to Architect well in advance of executing any cutting or alteration which affects:
  - 1. Work of Owner or separate contractor.
  - 2. Structural value or integrity of any element of the Project.
  - 3. Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.

4. Efficiency, operational life, maintenance, or safety of operational elements.
5. Visual qualities of sight-exposed elements.

B. Request shall include:

1. Identification of the Project.
2. Description of affected work.
3. The necessity for cutting, alteration, or excavation.
4. Effect on work of Owner or any separate contractor, or on structural or weatherproof integrity of Project.
5. Description of proposed work:
  - a. Description of why cutting-and-patching cannot (reasonably) be avoided.
  - b. Scope of cutting, patching, alteration, or excavation.
  - c. How it will be performed.
  - d. How structural elements (if any) will be reinforced.
  - e. Trades who will execute the work.
  - f. Products proposed to be used.
  - g. Extent of refinishing to be done.
  - h. Approximate dates of the work, and anticipated results in terms of variations from the work as originally completed (structural, operational, visual, and other qualities of significance).
6. Alternatives to cutting and patching.
7. Cost proposal, when applicable.
8. Written permission of any separate contractor whose work will be affected.

C. Submit written notice to Architect designating date and time the work will be uncovered.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. Except as otherwise indicated or authorized by the Architect, provide materials for cutting-and-patching which will result in equal-or-better work than the work being cut-and-patched, in terms of performance characteristics and including visual effect where applicable. Comply with the requirements and use materials identical with the original materials where feasible and where recognized that satisfactory results can be produced thereby.
- B. Comply with specifications and standards for each specific product involved.

## PART 3 - EXECUTION

### 3.01 INSPECTION

- A. Inspect existing conditions of Project, including elements subject to damage or to movement during cutting and patching.
- B. After uncovering work, inspect conditions affecting installation of Products, or performance of work.
- C. Report unsatisfactory or questionable conditions to Architect and Owner in writing; do not proceed with work until Architect and Owner (as applicable) has provided further instructions.

### 3.02 PREPARATION

- A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of Work.



- B. Provide devices and methods to protect other portions of Project from damage.
- C. Provide protection from elements for that portion of the Project which may be exposed by cutting and patching work and maintain excavations free from water.

3.03 PERFORMANCE

- A. Execute cutting and demolition by methods which will prevent damage to other work and will provide proper surfaces to receive installation of repairs.
  - 1. In general, where mechanical cutting is required, cut work with sawing and grinding tools, not with hammering and chopping tools. Core drill openings through concrete.
- B. Employ original installer or fabricator to perform cutting and patching for:
  - 1. Weather-exposed or moisture-resistant elements.
  - 2. Sight-exposed finished surfaces.
- C. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes.
- D. Restore work which has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents.
- E. Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.
- F. Restore exposed finishes of patched areas; and, where necessary extend finish restoration onto retained work adjoining, in a manner which will eliminate evidence of patching.
  - 1. Where patch occurs in a smooth painted surface, extend final paint coat over the entire unbroken surface containing the patch.
- G. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
  - 1. For continuous surfaces, refinish to nearest intersection.
  - 2. For an assembly, refinish entire unit.

END OF SECTION

SECTION 01120

ALTERATION PROJECT PROCEDURES

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 REQUIREMENTS INCLUDED

- A. Coordinate Work and schedule elements of alterations and renovation work by procedures and methods that expedite completion of the Work.
- B. In addition to demolition specified in Section 02070, SELECTIVE DEMOLITION, and indicated on Drawings, cut, move, and remove miscellaneous existing work as necessary to provide access and to allow alterations and new work to proceed. Include but do not limit work to:
  - 1. Repair and removal of hazardous and unsanitary conditions and materials.
  - 2. Removal of abandoned items and items that serve no useful purpose, such as abandoned piping, conduit, and wiring.
  - 3. Removal of unsuitable and extraneous materials not marked for salvage, such as abandoned equipment, and debris such as rotted wood, rusted metals and deteriorated concrete.
  - 4. Cleaning of surfaces, and removal of surface finishes as needed to install new work and finishes.
- C. Patching, repair, and refinishing existing work intended for reuse, to specified condition for each material, with suitable transition to adjacent new items of construction.

1.02 ALTERATIONS, CUTTING, AND PROTECTION

- A. Ensure that work is performed by workers qualified for each condition and material encountered.
- B. Cutting of existing construction required to install equipment under various Sections shall be done by coring or sawing method under Section appropriate to materials and construction.
- C. Cut and remove minimum materials necessary and avoid damage to adjacent work intended for reuse.
- D. Cut finish surfaces such as masonry, tile, plaster and metals by methods that terminate surfaces in a straight line at natural points of division.
- E. Cutting and patching work shall comply with requirements of Section 01045, CUTTING AND PATCHING.
- F. Protect existing finishes, equipment, and adjacent work scheduled to remain from damage from weather and extremes of temperature.
  - 1. Maintain existing interior work above 60oF.

## PART 2 - PRODUCTS

### 2.01      SALVAGED MATERIALS FOR REUSE

- A.      Salvage sufficient quantities of cut and removed materials to replace damaged work of existing construction when material is not readily obtainable on current markets.
  - 1.      Store salvaged items in dry, secure place on site.
  - 2.      Items not required for use in repair of existing work shall remain Owner's property.
  - 3.      Do not incorporate salvaged or used materials in new construction without Architect's approval and approval of Owner.

### 2.02      PATCHING, EXTENDING, AND MATCHING

- A.      Provide same products or types of construction as those in existing structure, as needed to patch, extend, and match existing work.
- B.      Generally, Contract Documents do not define products or standards of workmanship present in existing construction; determine products and workmanship by inspection and testing. Architect will judge workmanship and materials against existing as a sample of comparison.
- C.      Provide products, finishes, and types of construction for patching, extending, and matching shall be performed as necessary to make work complete and consistent to identical standards of quality.

## PART 3 - EXECUTION

### 3.01      PERFORMANCE

- A.      Patching of existing construction to accommodate work of various Sections shall be performed under Sections that specify methods and materials similar to adjacent existing construction, in the following areas:
  - 1.      Holes adjacent to penetrations for conduit, pipes and ductwork where exposed to view.
  - 2.      Holes adjacent to penetrations through fire walls for conduit, pipes and ductwork through fire walls as required by code.
  - 3.      Areas adjacent to installation of new doors and frames and other framed wall and partition penetrations.
  - 4.      Removal and patching of damaged material where indicated.
- B.      Patch areas exposed to view after removal of existing construction such as chair rails, base, cove and intersecting walls as indicated.
- C.      Patch and extend existing work using skilled workers who are capable of matching existing quality of workmanship. Quality of patched or extended work shall be equal to that specified for new work.

### 3.02      ADJUSTMENTS

- A.      Where partitions are removed, patch floors, walls, and ceilings, with finish materials to match existing.
  - 1.      Where removal of partitions results in adjacent spaces becoming one, rework floors and ceilings to provide smooth planes without breaks, steps, or bulkheads. Where extreme change of plane of two inches or more occurs, request instructions from Architect as to method of making transition.

3.03          DAMAGED SURFACES

- A.      Patch and replace parts of existing finished surfaces which are found to be damaged, lifted, discolored, or otherwise imperfect, with matching materials.
  - 1.      Provide adequate support of substrate before patching finish.
  - 2.      Refinish patched portions of painted and coated surfaces to produce uniform color and texture over entire surface.
  - 3.      When existing surface finish cannot be matched, refinish entire surface to nearest intersections.

3.04          TRANSITION FROM EXISTING TO NEW WORK

- A.      When new work abuts or finishes flush with existing work, make smooth transition. Patched work shall match existing adjacent work in texture and appearance so that patch or transition is not visible from 5 ft. away.
- B.      When finished surfaces are cut so that smooth transition with new work is not possible, terminate existing surface in a neat manner along straight line at natural line of division. Provide trim appropriate to finished surface.

3.05          CLEANING

- A.      Perform periodic and final cleaning as specified in Section 01700, CONTRACT CLOSEOUT.
- B.      At completion of work of each Section, clean area and prepare surfaces for work of other Sections.
- C.      At completion of alterations work in each area, provide final cleaning and return space to condition suitable for use by Owner.

END OF SECTION

SECTION 01200

PROJECT MEETINGS

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for project meetings, including but not limited to:
  - 1. Pre-Construction Meeting.
  - 2. Pre-Installation Conference.
  - 3. Progress Meetings.
  - 4. Coordination Meetings.
  - 5. Special Meetings.
- B. Representatives of contractors, subcontractors, and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
- C. Architect may attend meetings to ascertain that Work is expedited consistent with Contract Documents and construction schedules.
- D. NOTE: The requirements of Project Meetings will be established following award of Contract and will be consistent with the requirements of a Contract of this duration.

1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
  - 1. Section 01300, SUBMITTALS.
  - 2. Section 01700, CONTRACT CLOSEOUT.

1.03 PROJECT MEETINGS, GENERAL

- A. Agendas: Prepare agendas for Project Meetings. Distribute copies to parties in attendance.
- B. Meeting Notices: Prepare and distribute written notices of Project Meetings four working days in advance of each meeting.
- C. Arrangements: Make physical arrangements for Project Meetings, including but not limited to:
  - 1. Arranging space and seating.
- D. Preside at Project Meetings.
- E. Minutes: Record minutes of Project Meetings, including significant procedures and decisions.

- F.     Distribution of Minutes: Reproduce and distribute copies of Project Meeting minutes within three working days after each meeting to participants of meeting, to parties affected by decisions made at meetings, and to Architect.

1.04     PRE-CONSTRUCTION MEETING

- A.     Schedule within three (3) days after date of Notice to Proceed.
- B.     Location: A central site, convenient for all parties, designated by Contractor.
- C.     Attendance: Require and notify the following to attend
1.     Owner's Representative.
  2.     Architect and his Professional Consultants.
  3.     Clerk of the Works.
  4.     Contractor's Superintendent.
  5.     Major subcontractors.
  6.     Major suppliers.
  7.     Others as appropriate.
- D.     Suggested Agenda:
1.     Discussion of major subcontractors and suppliers.
  2.     Projected Construction Progress Schedules.
  3.     Critical work sequencing.
  4.     Major equipment deliveries and priorities.
  5.     Project Coordination, including designation of responsible personnel.
  6.     Procedures and processing of:
    - a.     Field decisions.
    - b.     Proposal Requests.
    - c.     Submittals.
    - d.     Change Orders.
    - e.     Application for Payment.
  7.     Adequacy of distribution of Contract Documents.
  8.     Procedures for maintaining Record Documents.
  9.     Use of premises:
    - a.     Office, work, and storage areas.
    - b.     Owner's requirements.
    - c.     Maintenance of access and use of existing fire department operations.
  10.    Communications protocol.
  11.    Construction facilities, controls, and construction aids.
  12.    Temporary utilities including interruptions of existing utilities.
  13.    Safety and first-aid procedures.
  14.    Security procedures.
  15.    Housekeeping procedures.
  16.    Demolition coordination.

1.05     PRE-INSTALLATION CONFERENCES

- A.     Conduct pre-installation conferences at site prior to construction activities which require coordination. Installers, manufacturer's representatives, and fabricators of materials or systems affected shall be required to attend. Advise Architect of scheduled meeting dates.

- B. Do not allow affected work to proceed if the conference cannot be successfully concluded. Initiate actions necessary to resolve impediments to performance of the work and reconvene the conference at the earliest feasible date.

#### 1.06 PROGRESS MEETINGS

- A. Schedule regular weekly progress meetings or as otherwise directed.
- B. Hold called meetings as required by progress of the Work.
- C. Location of the meetings: Project field office of Contractor.
- D. Attendance: Require and notify the following to attend:
  - 1. Architect and his professional consultants, as needed.
  - 2. Subcontractors, as appropriate to the agenda.
  - 3. Suppliers, as appropriate to the agenda.
  - 4. Others.
- E. Suggested Agenda:
  - 1. Review and approval of minutes of previous meeting.
  - 2. Review of Work progress since previous meeting.
  - 3. Field observations, problems, and conflicts.
  - 4. Problems which impede Construction Progress Schedule.
  - 5. Review of off-site fabrication and delivery schedules.
  - 6. Corrective measures and procedures to regain projected schedule.
  - 7. Revisions to Construction Progress Schedule.
  - 8. Progress schedule during succeeding work period.
  - 9. Coordination of schedules.
  - 10. Review submittal schedules; expedite as required.
  - 11. Maintenance of quality standards.
  - 12. Pending changes and substitutions.
  - 13. Review proposed changes for:
    - a. Effect on Construction Progress Schedule and on completion date.
    - b. Effect on other contracts of the Project.
  - 14. Other business.

#### 1.07 COORDINATION MEETINGS

- A. Conduct Coordination Meetings as necessary to properly coordinate the trades. Require representation of parties involved in coordination or planning of activities involved.

#### 1.08 SPECIAL MEETINGS

- A. Conduct Special Meetings as required throughout the course of the Work. Special meeting issues may include, but are not limited to:
  - 1. Safety issues.
  - 2. Labor issues.
  - 3. Special schedule issues.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION



## SECTION 01300

### SUBMITTALS

#### PART 1 - GENERAL

##### 1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

##### 1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for performance of Work, including:
  - 1. Progress schedules.
  - 2. Submittal schedule.
  - 3. Shop drawings.
  - 4. Product data.
  - 5. Samples.
  - 6. Progress reports.
  - 7. Schedule of values.
- B. Administrative Submittals: Refer to requirements specified in other Division 1 Specification Sections, and other Contract Documents, for administrative submittals, including:
  - 1. Permits.
  - 2. Applications for payment.
  - 3. Performance and payment bonds (where required).
  - 4. Insurance certificates.
  - 5. List of subcontractors.

##### 1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect Work of this Section. Other Specification Sections that directly relate to Work of this Section include, but are not limited to:
  - 1. Section 01010, SUMMARY OF WORK.
  - 2. Section 01040, COORDINATION.
  - 3. Section 01700, CONTRACT CLOSEOUT; Closeout submittals.

##### 1.03 SUBMITTAL PROCEDURES

- A. Coordination of Submittals: Coordinate timing of submittals with construction activities. Transmit submittals well enough in advance of performance of Work to avoid delays. Coordinate submittals of related elements of Work.
- B. Processing of Submittals: Allow sufficient review time to ensure installation will not be delayed because of time required to process submittals. Minimum processing times are as follows:
  - 1. Review by Architect's Office Only: Allow three business days for review and processing.

2. Reprocessing of Submittals: For submittals not approved initially, allow ten business days for review and reprocessing of submittals by Architect, and an additional five business days for review by each consultant.
  4. No extension of Contract Time will be authorized due to failure to transmit submittals sufficiently in advance of scheduled performance of Work.
  5. Review of submittals shall include the Architect's Action Stamp where only Architect's review is required. On submittals where Consultants' review is required, submittal should have both the Architect's review (action) Stamp and the Consultant's review (action) Stamp.
- C. Contractor's Preparation of Submittals: Place permanent label or title block on each submittal for identification. Indicate Project Name, Architect's Project Number, Specification Section number and title, date of submittal, name and address of Architect, name and Address of Contractor, name and address of subcontractor and/or supplier, name of manufacturer, Drawing number and detail reference.
1. Contractor's Review and Action Stamp: Provide suitable space on label or title block for Contractor's review and action stamp. Stamp and sign each submittal to show Contractor's review and approval prior to transmittal to Architect. Submittals not signed and stamped by Contractor will be returned without action.
  2. Architect's Review and Action Stamp: Provide minimum 4 in. x 4 in. space on label or title block for Architect's review and action stamp. Deliver submittals to Architect at address listed on cover of Project Manual.
  3. Architect's Consultants Review and Action Stamp: Provide minimum 4 in. x 4 in. space on label or title block for Architect's Consultants review and action stamp. Deliver submittals to Consultant at address listed on cover of Project Manual.
  4. Modify and customize submittals as required to show interface with adjacent work and attachment to building.
- D. Transmittal of Submittals: Transmit each item with Architect-accepted transmittal form. Submittals requiring only review and approval by Architect shall be transmitted directly to the Architect for review and approval by the Architect. Where submittals require primary review and approval by Architect's consultant (such as electrical equipment submittal requiring primary review by Electrical Engineer), submittal should be transmitted directly to that consultant, with copy of transmittal sent and (1) copy of submittal simultaneously to the Architect.
1. Each submittal shall identify Project, Contractor, subcontractor, major supplier; identify pertinent Drawing sheet and detail number, and Specification section number, as appropriate, on transmittal form.
  2. Source: Submittals received from sources other than Contractor will be returned without action.
  3. Deviations from Contract Documents: When products, materials, or systems submitted deviate from Contract Documents, record deviations clearly on transmittal form, or separate attached sheet.
- E. Comply with progress schedule for submittals related to Work progress.
- F. Each submittal shall be reviewed by the appropriate parties. Submittals requiring only Architect's review will be marked with Architect's Action Review Stamp; on submittals requiring Architect's Consultant review, the submittal should contain the Action Stamp of Architect's Consultant.
1. On submittals requiring Consultant's review, Consultant will review submittal and forward reviewed submittal, containing Consultant's review action stamp to Architect. Architect will then review submittal.
  2. After Architect and/or Architect's Consultant (as appropriate) reviews submittal, reviewed submittal will be copied by the Architect with sufficient copies made for all parties. The Architect will then forward the reviewed submittal to Contractor.
  3. The Contractor shall revise and resubmit as required. Identify changes made since previous submittal.

- G. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report inability to comply with provisions.

#### 1.04 PROGRESS SCHEDULE

- A. Timing: Submit progress schedule within two calendar days of Award of Contract.
- B. Preparation of Progress Schedule: Prepare horizontal bar type schedule or CPM Schedule.
- C. Format of Listings: Order chronologically by start of each unit of Work. List units of Work by Specification Section title.
- D. Content of Progress Schedule: Show complete sequence of construction by activity. Show dates of beginning and completion of each major element of construction.
- E. Distribution: Print and distribute progress schedule to Architect, Owner, subcontractors, and other parties affected. Post copies in field office. Instruct recipients to report promptly to Contractor in writing problems apparent from projections shown on schedule.
- F. Revisions: Update and reissue progress schedule monthly in conjunction with Application for Payment.

#### 1.05 SUBMITTAL SCHEDULE

- A. Timing: Prepare and issue complete Submittal Schedule no later than ten working days after Architect accepts Progress Schedule.
- B. Preparation: Coordinate Submittal Schedule with Progress Schedule, and Schedule of Values.
- C. Content of Submittal Schedule: Prepare schedule in order by Specification Section. Provide the following information for each submittal:
  - 1. Scheduled date of initial submittal.
  - 2. Specification Section number.
  - 3. Submittal type.
  - 4. Name of subcontractor or supplier.
- D. Distribution: Print and distribute Submittal Schedule to Architect, Owner, subcontractors, and other parties affected. Post copies in field office.
- E. Revisions: Update and reissue Submittal Schedule monthly in conjunction with Application for Payment.

#### 1.06 SHOP DRAWINGS

- A. Provide accurately prepared, large scale and detailed shop drawings prepared specifically for this Project on reproducible sheets. Show adjacent conditions and related work. Show accurate field dimensions where appropriate. Identify materials and products shown. Note special coordination required. Standard information prepared without specific reference to Project is not considered shop drawings.
- B. Shop drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates, and similar drawings.
- C. Show every component of fabricated item, notes regarding manufacturing process, coatings and finishes, identifying numbers conforming to Contract Documents, (i.e. stair numbers, door numbers, etc.) dimensions, and appropriate trade names. Show anchorage and fastening details, including type, size and spacing. Show material gage and thickness. Indicate welding details and joint types.

- D. Shop Drawing Sheet Size: Except for templates, patterns, and other full-size drawings, submit shop drawings on sheets at least 8-1/2 in. x 11 in., but no larger than 36 in. x 48 in.
- E. Submittal Quantities: Submit shop drawings in following quantities:
  - 1. Submit one (1) reproducible and three (3) blackline prints of each sheet.

1.07 PRODUCT DATA

- A. Definition: Product data includes manufacturer's standard published literature, such as installation instructions, catalog cuts, color charts, rough-in diagrams and wiring diagrams. When product data must be prepared specifically because standard published data is not suitable for use, submit as shop drawing.
- B. Preparation: Mark each copy of product data to show applicable choices and options. Where published product data includes information on several products and choices, mark copies to clearly indicate information applicable to this Project.
- C. Do not submit product data until compliance with requirements of Contract Documents has been confirmed.
- D. Submittal Quantities: Submit product data in following quantities:
  - 1. Submit number of copies required by Contractor, plus additional one copy to be retained by Architect.
- E. Installer Copy: Verify that installer of Work possesses a current copy of Architect-approved product data prior to installation.

1.08 SAMPLES

- A. Submit samples identical with materials and products to be installed. Where indicated, prepare samples to match Owner's sample. Label sample with description, source, manufacturer's name, and catalog number. Submit samples along with certifications that products comply with referenced standards.
- B. Architect Review: Architect will review samples for confirmation of visual intent, color, pattern, texture, and type. Architect will not test samples for compliance with other specified requirements, which shall remain exclusive responsibility of Contractor.
- C. Submittal Quantities: When variation in color, pattern, or texture can be expected in finish work, submit multiple samples (minimum of three) to show approximate limits of variations. Submit samples in following quantities:
  - 1. Initial Selection: For initial selection of color, texture, and pattern, submit one full set of manufacturer's available samples.
  - 2. Verification Samples: Submit three sets of samples selected. One set will be returned to Contractor for use at Project Site for quality control comparisons.
- D. Distribution: Distribute additional sets of approved samples to subcontractors, suppliers, installers, and others required for proper performance of Work. Indicate distribution on transmittal forms.

1.09 DAILY PROGRESS REPORTS

- A. Prepare daily construction Progress Reports. Record following information concerning events on Project Site:

1. List of subcontractors at site.
2. Accidents and unusual events.
3. Meetings and significant decisions.
4. Orders and requests by governing authorities.
5. Change orders received.
6. Equipment or system tests and start-ups.
7. Partial completions and occupancies.
8. Authorized substantial completions.

B. Distribution: Distribute copies to Architect weekly.

#### 1.10 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.

1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
  - a. Application for Payment forms with Continuation Sheets.
  - b. Submittals Schedule.
2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
3. Sub-schedules: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values correlated with each phase of payment.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the Schedule of Values:
  - a. Project name and location.
  - b. Name of Architect.
  - c. Architect's project number.
  - d. Contractor's name and address.
  - e. Date of submittal.
2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
  - a. Related Specification Section or Division.
  - b. Description of the Work.
  - c. Name of subcontractor.
  - d. Name of manufacturer or fabricator.
  - e. Name of supplier.
  - f. Change Orders (numbers) that affect value.
  - g. Dollar value.
    - 1). Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.

5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
  - a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.
6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
  - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
8. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

#### 1.11 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return the submittal without action.
- B. Architect's Review: Architect will review submittals, stamp and indicate action, and return to Contractor. Architect will review submittals for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Architect's review and approval of submittals shall be held to limitations stated in the CONTRACT and SPECIFICATIONS. In no case shall approval or acceptance by Architect be interpreted as release of Contractor of responsibility to fulfill requirements of Contract Documents. No acceptance or approval of submittals, nor any indication or note marked by Architect on submittals, shall constitute authorization for increase in Contract Sum.
- C. Action Stamp: Architect will stamp each submittal with an action stamp. Stamp will indicate action taken as follows:
  1. REVIEWED: No notations.
  2. REVIEWED AS NOTED: Resubmission not required. Minor notations; items may be fabricated without corrections of original drawings; review is complete, and all notations are deemed obvious without ambiguity.
  3. REVISE AND RESUBMIT: Resubmission required. Minor notations; no items should be fabricated without further corrections of original drawings; review is not complete; details of items noted by checker must be clarified further before full review can be completed. Submit new transparencies.
  4. REJECTED: Drawing is rejected as not in accord with the Contract; too many notations, or other justifiable reason. When returning drawings, Architect will state reasons for rejection. Revise and resubmit. Do not fabricate.
- D. Informational Submittals: Architect will review each submittal and will not return it, or will reject and return if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- E. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

- F. Required Resubmittals: Make corrections or changes to submittals required by Architect and resubmit until approved. Revise initial shop drawings or product data and resubmit as specified for initial submittal. Indicate changes made other than those requested by Architect. Submit new samples as required for initial submittal.

1.12 DISTRIBUTION BY CONTRACTOR

- A. Distribution: When submittal is marked "REVIEWED" or "REVIEWED AS NOTED", make prints and copies and distribute to Owner, subcontractors, suppliers, fabricators, and other parties requiring information from submittal for proper coordination and performance of Work. Print copies of shop drawings from approved reproducible only.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 SUMMARY

- A. This Section specifies construction facilities and temporary controls required throughout construction period.

1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect the Work of this Section. Other Specification Sections that directly relate to Work of this Section include, but are not limited to:
  - 1. CONTRACT and SPECIFICATIONS; Conditions of the Contract.
  - 2. Section 01010, SUMMARY OF WORK; Description of work and work of separate contracts.

1.03 SUBMITTALS

- A. Schedule: Submit a schedule indicating implementation and termination of each temporary utility within fifteen days of date established for Commencement of the Work.

1.04 QUALITY ASSURANCE

- A. Comply with requirements of authorities having jurisdiction, codes, utility companies, OSHA, and industry standards including, but not limited to:
  - 1. NFPA 241.
  - 2. NFPA 70.
  - 3. ANSI A10.
  - 4. NECA NJG-6.

1.05 PROJECT CONDITIONS

- A. Temporary Utilities: Existing building services may be used as source for temporary power for proposed renovation work including the following: electric power and water service. The Owner will permit tie-in to these services at locations authorized by the Owner. The Owner reserves the right to limit services should the temporary utilities interrupt Owner's existing uses at the school building(s) or when in the opinion of the Owner there is evidence of waste or abuse.
- B. Conditions of Use: Maintain temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload temporary facilities. Do not allow hazardous, dangerous, or unsanitary conditions to develop on site.
- C. Comply with requirements of the Owner.



1.06 NOISE CONTROL

- A. Develop and maintain a noise-abatement program and enforce strict discipline over all personnel to keep noise to a minimum.
- B. Execute construction work by methods and by use of equipment which will reduce excess noise.
  - 1. Equip air compressors with silencers, and power equipment with mufflers.
  - 2. Manage vehicular traffic and scheduling to reduce noise.
  - 3. No heavy equipment may be started or idled before 7:00 A.M.

1.07 ACCEPTABLE HOURS OF OPERATION

- A. Contractor shall conduct construction in compliance with applicable Town of Millbury ordinances or bylaws relative to acceptable hours of operation.
  - 1. Except where approved by the Owner, no work shall occur prior to 7:00 AM, Monday through Friday.
  - 2. Where required to meet project schedule, the Owner may permit Contractor to work on Saturdays or may extend Contractor's work hours if permitted by local authorities having jurisdiction.

PART 2 - PRODUCTS

2.02 TEMPORARY UTILITIES

- A. Scope: Temporary utility work includes, but is not limited to:
  - 1. Water service and distribution.
  - 2. Electric power and light.
- B. Temporary Water Service and Distribution: Water service is available at the building. Install water service and distribution piping in sizes and pressures adequate for construction.
  - 1. Provide water for construction purposes, including water for drinking and fire protection.
  - 2. Pay costs for installation, maintenance, removal, and service charges for water used. Install branch piping with taps located so water is available through hoses throughout construction.
  - 3. Protect piping and fittings against freezing.
  - 4. The Owner will pay costs for water used.
- C. Electric Power Service: Electrical service is available at the building. Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations. Pay costs to bring extend service to project site, including service charges, installation, maintenance, and removal of this temporary electric service.
  - 1. Provide circuit and branch wiring, with area distribution boxes located so power and lighting is available throughout construction by use of construction-type power cords.
  - 2. Provide adequate artificial lighting where natural light is not adequate for work, and for areas accessible to public.
  - 3. Work shall meet applicable requirements of NFPA 70.
  - 4. Cost of electricity will be borne by the Owner.
  - 5. The electrical power supply at the site is single phase, 110/120 volt. All other power requirements including 208 volt service or 3-phase service for tools and equipment necessary to perform the work shall be the responsibility of the Contractor.
  - 6. All power cords for electrical power shall be furnished by the Contractor.

## 2.03 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES

- A. Scope: Temporary construction and support facilities include, without limitation:
1. Sanitary facilities.
  2. Temporary enclosures.
  3. Construction aids.
  4. Waste disposal services.
  5. Water control.
  6. Pollution and dust control.
  7. Temporary ventilation.
- B. Sanitary Facilities: Provide and maintain clean portable toilet facilities. Do not use permanent facilities within the building unless permitted by Owner in writing.
1. If use of permanent facilities is permitted, maintain washrooms in clean and sanitary condition and supply exhaustible materials such as soap, hand towels, and toilet tissue.
- C. Temporary Enclosures: Provide temporary enclosures to separate work areas from occupied school areas. Design and construct temporary enclosures to provide acceptable working conditions, to allow effective temporary ventilation, and to prevent entry of unauthorized persons.
1. Provide temporary exterior doors with self-closing hardware and padlocks.
  2. Design enclosures to be removable to allow handling of materials.
- D. Construction Aids: Provide construction aids and equipment required by personnel to facilitate execution of the Work; scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes, and other such facilities and equipment.
1. Refer to respective sections for particular requirements for each trade.
- E. Waste Disposal: Maintain all areas under Contractor's control free of extraneous debris. Initiate and maintain a specific program to prevent accumulation of debris at construction site, storage and parking areas, or along access roads and haul routes.
1. Provide containers for deposit of debris.
  2. Provide periodic inspection of traffic areas to enforce requirements.
  3. Schedule daily collection and disposal of debris within building.
  4. Provide additional collections and disposals of debris whenever the periodic schedule is inadequate to prevent accumulation of debris on-site.
  5. Coordinate dumpster locations with Owner.
- F. Pollution Control: Provide methods, means, and facilities required to prevent contamination of soil, water, or atmosphere by the discharge of noxious substances from construction operations. Provide equipment and personnel, perform emergency measures required to contain any spillage and to remove contaminated soils or liquids.
1. Take special measures to prevent harmful substances from entering public waters.
  2. Prevent disposal of wastes, effluents, chemicals, or other such substances adjacent to streams, or in sanitary or storm sewers.
  3. Provide systems for control of atmospheric pollutants.
  4. Prevent toxic concentrations of chemicals.
  5. Prevent harmful dispersal of pollutants to atmosphere.

- G.      Dust Control: Provide positive methods and apply dust control materials to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into the atmosphere.

2.04      TEMPORARY SIGNAGE

- A.      Scope: Temporary signage includes, but is not limited to:
1.      Informational signs.
- B.      Informational Signs: Provide painted signs with painted lettering, or standard products. Erect at appropriate locations to provide required information.
1.      Size of signs and lettering: as required by regulatory agencies, or as appropriate to usage.
  2.      Colors: as required by regulatory agencies, otherwise of uniform color throughout Project.

2.05      SECURITY AND PROTECTION FACILITIES

- A.      Scope: Security and protection facilities includes but is not limited to:
1.      Temporary fire protection.
  2.      Barricades, warning signs, lights.
  3.      Security procedures.
- B.      Temporary Fire Protection: Provide and maintain suitable fire protection equipment and services. Establish procedures for fire protection for welding and other potentially hazardous construction operations. Ascertain and comply with requirements of Project insurance carrier, Town of Millbury Fire Department, and the Commonwealth of Massachusetts State Fire Marshal. Permanent fire protection system may be activated to meet these requirements. Replace fusible link heads and other expended or discharged components at time of Substantial Completion.
1.      Coordinate fire protection program with Owner and Millbury Fire Department.
  2.      Locate temporary portable fire extinguishers in convenient locations, not less than one extinguisher per floor.
  3.      Store combustible materials in containers in fire-safe locations.
  4.      Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways, and other access routes.
- C.      Barricades, Warning Signs, and Lights: Provide and maintain barricades, warning signs, warning lights, railings, walkways, and the like. Paint signs and barricades with appropriate colors, graphics, and warnings to inform public and job-site personnel of hazards.
- D.      Construction Parking: Per General Contractor plan, subject to review and approval by the Owner.
- E.      Security Procedures: Secure project against unauthorized entry at all times. Provide secure, locked, temporary entrances to prevent vandalism, theft, and similar violations of security.
1.      Storage: Provide secure, locked facilities for areas where materials and equipment are stored.
  2.      Comply with Owner's security program and requirements.

PART 3 - EXECUTION

3.01      MAINTENANCE, TERMINATION, AND REMOVAL

- A.      Supervision: Enforce strict discipline in use of temporary facilities. Limit waste and abuse.

- B. Maintenance: Maintain temporary facilities in operating condition; repair damages immediately upon discovery. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour per day basis.
- C. Termination and Removal: Unless otherwise requested by Owner or Architect, remove each temporary facility when no longer useful, or when replaced by permanent facility.
- D. Final Cleaning: Provide final cleaning of building per Contract Documents.

END OF SECTION

SECTION 01600

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for materials and equipment used for the Project.

1.02 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
  - 1. CONTRACT; Conditions of the Contract.
  - 2. Section 01010, SUMMARY OF WORK.
  - 3. Section 01300, SUBMITTALS.
  - 4. Section 01700, CONTRACT CLOSEOUT.

1.03 PRODUCTS

- A. Products include material, equipment, and systems.
- B. Comply with Specifications and referenced standards as minimum requirements.
- C. Components required to be supplied in quantity within a Specification Section shall be the same and shall be interchangeable.
- D. Do not use materials and equipment removed from existing structures, except as specifically required, or allowed, by the Contract Documents.
- E. In the case of an inconsistency between Drawings and the Project Manual, or within either document which is not clarified by addendum, the product of greater quality or greater quantity of work shall be provided in accordance with the Architect's interpretation.

1.04 WORKMANSHIP

- A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- B. Perform work by persons qualified to produce workmanship of specified quality.
- C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.05      MANUFACTURERS' INSTRUCTIONS

- A.      When work is specified to comply with manufacturers' instructions, submit copies as specified in Section 01300, SUBMITTALS, distribute copies to persons involved, and maintain one set in field office.
- B.      Perform work in accordance with details of instructions and specified requirements.

1.06      TRANSPORTATION AND HANDLING

- A.      Refer to CONTRACT and Specifications Sections for requirements pertaining to transportation and handling of materials and equipment.
- B.      Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturers' unopened containers or packaging, dry
- C.      Provide equipment and personnel to handle products by methods to prevent soiling or damage.
- D.      Promptly inspect shipments to assure that products comply with requirements, that quantities are correct, and products are undamaged.

1.07      STORAGE AND PROTECTION

- A.      Refer to CONTRACT and SPECIFICATIONS and Technical Specifications Sections for requirements pertaining to storage and protection of materials and equipment.
- B.      Store products in accordance with manufacturers' instruction, with seals and labels intact and legible. Store sensitive products in weather tight enclosures; maintain within temperature and humidity ranges required by manufacturers' instructions.
- C.      For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
- D.      Arrange storage to provide access for inspection. Periodically inspect to assure that products are undamaged and are maintained under required conditions.
- E.      General Contractor shall protect all loose and installed materials from damage until final acceptance of the Project.

1.08      PRODUCT STANDARDS

- A.      Any product specified by reference to the number, symbol, or title of a standard, such as Commercial Standard, a Federal Specification, an ASTM Standard, an ANSI Standard, a trade association standard, or other similar standard, shall comply with the requirements of the latest issue of such standard or revision thereof, including any amendment or supplement thereto, as listed in the latest official index in effect as of the bid date.
- B.      The standards referred to, except as modified in the Specifications, shall have full force and effect as though printed in the Specifications. The Architect will furnish, upon request, information as to how copies of the standards referred to may be obtained.
- C.      All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned, in accordance with the manufacturer's printed instructions, unless otherwise specified.

1.09 SUBSTITUTIONS OF SPECIFIED PRODUCTS AND SYSTEMS

- A. Substitutions of specified products and systems shall comply with requirements of Chapter 30, Section 39M of General Laws, and additional requirements and procedures specified herein.
- B. The Contract Documents are intended to produce a building of consistent character and quality of design. All components of the building including visible items of mechanical and electrical equipment have been selected to have a coordinated design in relation to the overall appearance of the building. The Architect will judge the design, functionality, and appearance of proposed substitutes on the basis of their suitability in relation to the overall design of the project, as well as for their intrinsic merits. The Architect will not approve, as equal to materials specified, proposed substitutes which, in the Architect's opinion, would be out of character, obtrusive, or otherwise inconsistent with the character or quality of design of the Work. With respect to interior or exterior finishes value or effect, the Architect may not approve as equal any proposed substitute which, in the Architect's sole opinion, would not produce the same artistic or aesthetic value or effect. In order to permit coordinated design of color and finishes the General Contractor shall, if required by the Architect, furnish the substituted material in any color, finish, texture, or pattern which would have been available from the manufacturer originally specified, at no additional cost to the Owner.
- C. Specific reference in the Specification to any product, material, or process by name, make, or catalog number shall be interpreted as establishing a standard of quality. An item will be considered equal to the item so named or described if (1) it is at least equal in quality, durability, appearance, strength and design; (2) it will perform at least equally the function imposed by the general design for the work; and (3) it conforms substantially, even with deviations to the detailed requirements for the item in the Specification. [M.G.L. Chapter 30, Section 39M (b).] The Architect shall be the sole judge of whether and proposed substitute product, material, process, or method is equal to that specified according to this standard, and his decision shall be final and binding on the General Contractor and any Subcontractor or Sub-Subcontractor.
- D. If the General Contractor proposes to use a material which, while suitable for the intended use, deviates in any way from the detailed requirements of the Contract Documents, the General Contractor shall inform the Architect in writing of the nature of such deviations at the time the material is submitted for approval and shall request written approval of the deviation from the requirements of the Contract Documents.
- E. In requesting approval of deviations of substitutions, the General Contractor shall provide, upon request, evidence leading to a reasonable certainty that the proposed substitution or deviation will provide a quality or result at least equal to that otherwise attainable. If in the opinion of the Architect, the evidence presented by the General Contractor does not provide a sufficient basis for such reasonable certainty, the Architect may reject such substitution or deviation without further investigation.
- F. Any additional cost, loss, or damage arising from the substitution of any material or any method for those originally specified shall be borne by the General Contractor, notwithstanding approval or acceptance of such substitution by Owner or the Architect, unless such substitution was made at the written request or direction of Owner or the Architect.

1.10 IDENTIFICATION OF EQUIPMENT

- A. All electrical equipment shall be properly identified including manufacturer's nameplate, serial number, model, capacity, size, etc., as appropriate for the equipment. In addition, furnish the manufacturer's operating instructions and preventative maintenance manual and recommendations. Refer to Section 01700, CONTRACT CLOSEOUT for submittal requirements.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION



SECTION 01700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 FINAL CLEANING

- A. Unless otherwise specified under the various Sections of the Specifications, the General Contractor shall perform final cleaning operations as herein specified prior to final inspection.
- B. Maintain project site free from accumulations of waste, debris, and rubbish, caused by operations. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave project clean and ready for occupancy.
- C. Cleaning shall include all surfaces, interior and exterior in which the General Contractor has had access to, whether existing or new, and in all the areas used by the Contractor in conducting the improvements required of this Contract.
- D. Refer to Sections of the Specifications for cleaning of specific products or work.
- E. Use only those materials which will not create hazards to health or property, and which will not damage surfaces.
- F. Use only those cleaning materials and methods that are recommended by the manufacturer of surface material to be cleaned.
- G. Employ experienced workmen or professional cleaners for final cleaning operations.
- H. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.
- I. Glass and plastic surfaces within the project area shall be thoroughly cleaned and washed by qualified window cleaners at the expense of the General Contractor just prior to acceptance of the Work.
- J. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
- K. Polish glossy surfaces to a clear shine and provide wax where necessary.
- L. Ventilating Systems: Clean permanent filters and replace disposable filters if units were operated during construction. Clean ducts, blowers, and coils if units were operated without filters during construction.
- M. Broom clean exterior paved surfaces and rake clean other surfaces of the grounds.
- O. At the end of the project, General Contractor and each Subcontractor shall remove all his tools, equipment, machinery, and surplus materials from the job site. The General Contractor shall remove all waste materials and rubbish from the project at this time. All temporary structures shall be removed and the project shall be left clean.

1.02 RECORD DRAWINGS

- A. Record Drawings shall consist of all the Contract Drawings.
- B. The General Contractor and all Subcontractors shall be required to maintain one set of Record Drawings, as the work relates to their Sections of the Specifications, at the site.
- C. The Record Drawings shall be stored and maintained in the General Contractor's field office apart from other documents used for construction. The Record Drawings shall be maintained in a clean, dry and legible condition and shall not be used for construction purposes.
- D. Record Drawings, as submitted by the General Contractor shall be verified in the field by the Architect or his Consultants. Verification by the Architect shall occur during the construction process and prior to the related work being completed and covered up.
- E. The Record Drawings shall be available at all time for inspection by the Owner or Architect. All deficiencies noted shall be promptly corrected.
- F. The following information shall be indicated on the Record Drawings:
  - 1. Record all changes, including change orders, in the location, size, number and type both horizontally and vertically of all elements of the project which deviate from those indicated on all the Contract Drawings.

1.03 PUNCH LIST

- A. The Contractor shall supervise and direct the work, using his best skill and attention. The Contractor shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the work under Contract.
- B. The Contractor shall carefully check his own work and that of subcontractors as the work is being performed. Unsatisfactory work shall be corrected immediately.
- C. During the finishing stages of the project, the Contractor shall make frequent inspections with subcontractors so as to progressively check for and correct faulty work.
- D. When the Contractor determines that he is substantially complete, that is, less than one percent of his contract remaining to be completed, he shall prepare for submission to the Architect a "punch list" which includes a list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents.
- E. Upon receipt of the Contractor's list of items to be completed or corrected, the Architect will promptly make a thorough inspection to verify the "punch list", setting forth in accurate detail any items on the Contractor's list and additional items that are not acceptable.
- F. When the "punch list" has been reviewed, the Architect will arrange a meeting with the Contractor and Subcontractors to identify and explain all "punch list" items, and answer questions on the work which must be done before final acceptance.
- G. When the Contractor gives notice that the punch list has been completed, the Architect will inspect that portion of the work and, if the items are found to be satisfactorily completed, advise the Contractor accordingly.

- H.      The General Contractor shall correct all "punch list" items or shall cause the correction of the "punch list" items within a time frame to be established when the "punch list" is made. The time frame for the completion of "punch list" shall not exceed the completion date of the Contract. Should the "punch list" not be completed within the specified time frame, the Owner may invoke the rights given under General Conditions.

1.04      CLOSEOUT REQUIREMENTS AND SUBMITTALS

- A.      Final Inspection: The General Contractor shall submit written certification that:
1.      Project has been inspected for compliance with Contract Documents and has satisfied the local authorities having jurisdiction.
  2.      Project is completed, and ready for final inspection.
- B.      Closeout Documents Required: The General Contractor shall provide all required documents as part of the Record Documents including but not limited to the following:
1.      All permit inspection records.
  2.      All warranties required by the Contract Documents.
  3.      Certificate of Occupancy from authorities having jurisdiction.
  4.      Equipment test reports.
  5.      Operation and Maintenance Manuals including Spare Parts list and related items.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 02070

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 WORK INCLUDED

- A. Selectively demolish and remove materials, systems, equipment, and structures indicated on the Drawings and specified herein as required to construct work indicated.
- B. Selective demolition shall include, but not be limited to the following:
  - 1. Selective demolition as indicated for construction of fire alarm and door replacement project work including removing existing doors as indicated.
  - 2. All other selective demolition work required to construct the work.

1.02 RELATED WORK

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
  - 1. Section 01045, CUTTING AND PATCHING.

1.03 SUBMITTALS

- A. The following shall be submitted:
  - 1. Permit for transport and legal disposal off-site of demolition material and debris.
  - 2. Selective demolition procedures and operational sequence for review and acceptance by the Owner and Architect.

1.04 JOB CONDITIONS

- A. Occupancy: Areas adjacent to where selective demolition occurs will be occupied prior to and following commencement of demolition. Comply with Owner requirements regarding maintenance of existing facilities and working conditions. Provide barriers that will minimize the spread of dust, debris, and other materials and as necessary to prevent damage to adjacent areas of the building. Provide for the safe passage of School and Town employees and visitors. Where existing finishes are to remain, provide adequate protection to prevent damage.
- B. Condition of Items and Structures: The Owner assumes no responsibility for the actual condition of items and structures to be demolished.
- C. Partial Demolition and Removal: Items indicated to be removed but having salvage value to the Owner may be removed from the building as work progresses. Transport items from site as they are removed. Sale or storage of items by the Contractor at the site will not be permitted.

1.05      PROTECTION

- A. Do not interfere with use of adjacent occupied spaces. Maintain free and safe passage to and from. Provide safe passage for all users of building. Specific requirements regarding work areas and maintenance of egress will be of primary importance.
- B. Prevent movement or settlement of adjacent structures. Provide and place bracing or shoring and be responsible for safety and support of structures. Assume liability for such movement, settlement, damage, or injury.
- C. Cease operations and notify Owner and Architect immediately if safety of adjacent facilities or structures appears to be endangered. Take precautions to properly support structures. Do not resume operations until safety is restored.
- D. Temporary Protections: Provide temporary barricades and other forms of protection as required to for protection of personnel from injury due to selective demolition operations.
  - 1. Protect existing finish work that is to remain from damage from demolition operations.
  - 2. Construct temporary dustproof and insulated partitions where required to separate areas where noisy and dusty operations are performed.
  - 3. Remove temporary protections at completion of the work.
  - 4. Comply with applicable requirements specified in Section 01500, CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS.
- E. Utility Services: Maintain existing utilities serving occupied or used facilities and other areas occupied by the Owner. Any interruptions to service shall be coordinated with the Owner so as to minimize disruption of building services, Owner's daily operations, and related services.

PART 2 - PRODUCTS

2.01      SALVAGING

- A. Materials indicated on the Drawings or designated in the field by the Owner to be salvaged shall be carefully removed and delivered to the Owner at locations determined by Owner.
- B. Mechanical and electrical items to be salvaged shall be protected from the weather.
- C. Salvaged items shall include the following:
  - 1. Existing doors where indicated or where Owner so directs.
  - 2. All other materials and equipment indicated.

PART 3 - EXECUTION

3.01      INSPECTION

- A. Prior to commencement of selective demolition work, inspect areas in which work will be performed. Note or photograph existing conditions which could be misconstrued as damaged resulting from selective demolition work.

3.02      PREPARATION

- A. Cover and protect existing finishes, fixtures, and equipment to remain. Protect from soiling, dust, or damage during demolition work.

- B. Erect and maintain dust and noise proof partitions as required to separate occupied areas from work areas.
- C. Locate, identify, stub-off, and disconnect utility services that are indicated not to remain. Provide by-pass services as necessary to maintain continuity of service to occupied areas.

3.03 SELECTIVE DEMOLITION

- A. Perform selective demolition work in a systematic manner. Items indicated to be removed shall be completely removed.
- B. Remove debris from site and dispose of legally.
- C. Cover and protect existing finishes, fixtures, and equipment to remain. Protect from soiling, dust, or damage during demolition work.

3.04 SALVAGE MATERIALS

- A. Where items are indicated to be salvaged, carefully remove indicated items, clean items, and deliver to storage area designated by the Owner.
- B. The Owner reserves the right to identify salvage of materials which are removed should the Owner wish to retain these removed items for Owner's use.

3.05 DISPOSAL OF MATERIALS

- A. Material resulting from selective demolition and not identified for salvaging shall become the property of the Contractor and shall be legally transported and disposed of off-site.
- B. Disposal shall be performed as promptly as possible and not left until the final clean up.

END OF SECTION

SECTION 05500

METAL FABRICATIONS

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 WORK INCLUDED

- A. The work of this Section includes, but is not limited to the following:

- 1. Loose steel lintels.
- 2. Miscellaneous rough hardware.
- 3. All other metal fabrications indicated.

1.02 RELATED WORK

- A. Examine Contract Documents for requirements that affect Work of this Section. Other Specification Sections that directly relate to Work of this Section include, but are not limited to:

- 1. Section 01045, CUTTING AND PATCHING.
- 2. Section 09901, PAINTING; Field painting.
- 3. Section 16101, ELECTRICAL WORK; Hangers, brackets, troughs, guards, and other steel items for support or protection of Electrical work.

1.03 SUBMITTALS

- A. Shop Drawings: Submit shop drawings of work showing size and thickness of each member, type of material, method of connection and assembly. Show dimensions, clearances, anchorages, relationships to surrounding work, coatings, and other pertinent details of fabrication and installation.

- 1. Show profiles, reinforcing, fasteners, and any accessories.
- 2. Indicate welded connections using standard AWS welding symbols. Indicate net weld lengths.

- B. Product Data: Provide manufacturer's product data, installation instructions, use limitations, and recommendations for each material used. Provide certifications that materials comply with

- C. Calculations: Where installed metal fabrication work is indicated to comply with certain design loadings, provide professionally prepared calculations, material properties, certification, and other information required for structural analysis of performance of work.

- D. Welders Certification: Provide certifications, signed by Contractor, certifying that welders employed at project comply with requirements specified under AWS D1.1 and AWS D1.3.

1.04 QUALITY ASSURANCE

- A. Engineering: Provide services of a professional engineer, registered in the State of Massachusetts to design and certify that work of this Section meets or exceeds performance requirements specified. Include design requirements for steel column supports, equipment supports, and all other items indicated.

- B. Shop fabricate work to greatest extent possible. Label each piece in shop to facilitate field assembly.
- C. Welding: Perform welding in conformance with AWS D1.1 and AWS D1.3, as applicable.
- D. Exterior use and exterior applications, for the purposes of this Section, mean those materials or assemblies used in areas in exterior walls, roofs, foundations or exposed to weather. Interior use, for the purposes of this Section, means materials or assemblies in enclosed, conditioned spaces.
- E. Pre-Construction Conference for Metal Fabrications: Contractor shall schedule a meeting to be attended by Contractor, Architect, fabricator, and galvanizer. Agenda shall include the following: Project schedule, scope of services, coordination between fabricator and galvanizer, finish of surfaces, application of coatings, submittals, and approvals.
- F. Coordination between Fabricator and Galvanizer:
  - 1. Prior to fabrication and final submittal of shop drawings to Architect through the Contractor, direct fabricators to submit shop drawings to the galvanizer for all fabrications.
  - 2. Direct galvanizer to review fabricator's shop drawings for suitability of materials for galvanizing and coatings and coordinate any required modifications to fabrications required to be done by the fabricator.

#### 1.05 PRODUCT HANDLING AND STORAGE

- A. Store work off ground and under cover. Protect from damage. Repair and clean work before erection.

#### 1.06 PROJECT CONDITIONS

- A. Field Measurements: Check actual locations of walls and other construction to which metal fabrications must fit by accurate field measurements before fabrication. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
  - 1. Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with fabricating products without field measurements. Coordinate construction to ensure that actual dimensions correspond to guaranteed dimensions. Allow for trimming and fitting.

#### 1.07 PERFORMANCE REQUIREMENTS

- A. Thermal Movements: Allow for thermal movement resulting from the following maximum change (range) in ambient temperature in engineering, fabricating, and installing metal fabrications to prevent buckling, opening of joints, overstressing of components and connections, and other detrimental effects. Base engineering calculation on actual surface temperatures of materials due to both solar heat gain and nighttime sky heat loss.
  - 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS

- A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.



1. Provide products and materials of new stock, free from defects, and of best commercial quality for each intended purpose.
  2. Steel to be galvanized finished shall be chemically suitable for galvanizing such that steel shall contain not more than the following elements: carbon below 0.25%, phosphorous below 0.5%, and manganese below 1.35%.
- B. Steel Plates, Shapes, and Bars: ASTM A 36 or ASTM A 572.
- C. Bolts and Fasteners: ASTM A 307 and A 325.
1. Anchor bolts, bolts smaller than 5/8 in., and fasteners shall be steel castings conforming to ASTM A 307. Bolts larger than 5/8 in. shall conform to ASTM A 325.
- D. Provide exposed fastenings of same material and finish as metal to which applied, unless otherwise noted.
- E. Welding Rods: Conform to AWS Standards and recommendations of welding rod manufacturer.
- F. Grout for Interior Applications: Pre-mixed, non-staining, non-corrosive, non-shrink, non-metallic complying with CE CRD-C-621, Type D.
- G. Grout for Exterior Applications: Provide Factory-packaged, non-shrink, non-staining, hydraulic controlled expansion cement formulation for mixing with water at project site. Provide formulation that is resistant to erosion from water exposure without need for protection by a sealer or waterproof coating. Provide Super Por-Rok, Erosion-Resistant Anchoring Cement, manufactured by Minwax Construction Products Division, or equal as approved by Architect.

## 2.02 FABRICATION - GENERAL

- A. Fabricate work of this Section to be straight, plumb, level and square, and to sizes, shapes and profiles indicated on approved shop drawings. Ease exposed edges. Cut, reinforce, drill and tap metal work as required for proper assembly.
1. Fabricate miscellaneous supports, brackets, braces, and the like required to fully complete the work.
  2. Obtain loading requirements from suppliers of work to be supported. Design and support systems with a safety factor of at least 6 unless otherwise indicated.
  3. Allow for thermal movement resulting from the following maximum change (range) in ambient temperature in the design, fabrication, and installation of installed metal assemblies to prevent buckling, opening up of joints, and overstressing of welds and fasteners. Base design calculations on actual surface temperatures of metals due to both solar heat gain and nighttime sky heat loss.
    - a. Temperature Change (Range): plus or minus 50 degrees F, total range 100 degrees F.
  4. Shear and punch metals accurately. Remove burrs.
  5. Ease exposed edges to a radius of approximately 1/32 in., unless indicated otherwise. Form bent corners to smallest radius possible without causing grain separation or impairing work.
  6. Remove sharp or rough areas on exposed traffic surfaces.
  7. Weld seams continuously. Spot welding is permitted for temporary welding only.
  8. Weld corners and seams continuously to comply with the following:
    - a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
    - b. Obtain fusion without undercut or overlap.
    - c. Remove welding flux immediately.

- d. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.
  - B. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type shown or, if not shown, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.
  - C. Provide for anchorage of type shown; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support required loads.
  - D. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
  - E. Cut, reinforce, drill, and tap metal fabrications as shown to receive finish hardware, screws, and similar items.
  - F. Fabricate joints that will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.
  - G. Galvanizing: Hot-dip galvanize exterior metal fabrications, items located in exterior wall assemblies, on roof, and other items shown to be galvanized. Comply with galvanizing requirements of this Section.
    - 1. Hot-dip galvanize exterior metal fabrications, items located in exterior wall assemblies, and other items indicated to be galvanized, in compliance with ASTM A 123, ASTM A 153, or ASTM A 386.
    - 2. Provide minimum 1.5 oz./ft.<sup>2</sup> zinc coating. Galvanize after fabrication.
  - H. Work Exposed to View: For work exposed to view, select materials with special care. Provide materials which are smooth and free of blemishes such as pits, roller marks, trade names, scale and roughness. Fabricate work with uniform hairline joints. Form welded joints and seams continuously. Grind welds flush to be smooth after painting. For exposed fasteners, use hex head bolts or Phillips head machine screws.
  - I. Loose Steel Lintel Fabrication: Fabricate lintels from angles or shapes for openings, recesses in walls, where shown, and elsewhere where needed. Provide for minimum of 8 in. bearing at each end. Weld individual angles or shapes together to form composite members where indicated or required.
  - J. Isolation: Where indicated provide vibration isolated connections and fasteners. Use products by Mason Industries or approved equal.
  - K. Miscellaneous Framing and Supports: Fabricate miscellaneous framing and supports to adequately support live and dead loads with a safety factor of 5. Provide necessary anchors, inserts, and fasteners. Fabricate support system to carry entire load of work being supported to structure above. Do not transfer any loads to ceiling systems.
    - 1. Cut, drill, and tap units to receive hardware, hangers and similar items.
    - 2. Coordinate loading and attachment requirements for miscellaneous framing and supports with manufacturers of items being supported.
- 2.03 HOT-DIP GALVANIZING AND SHOP PRIMING OF GALVANIZED SURFACES
- A. Galvanizing: For those items shown for galvanizing, apply nickel zinc coating by the hot-dip process complying with the following requirements:

1. ASTM A 153 for galvanizing iron and steel hardware.
  2. ASTM A 123 for galvanizing both fabricated and unfabricated iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, bars, and strip 0.0299 inch (0.76 mm) thick or thicker.
- B. Hot-Dip Galvanizing: Provide coating for iron and steel fabrications applied by the hot-dip process with 0.05 to 0.09 percent nickel and other earthly materials in the galvanizing kettle forming an alloy, DELTAGALV by Duncan Galvanizing or approved equal meeting all requirements of this specification. Comply with ASTM A 123 for fabricated products and ASTM A 153 for hardware. Provide thickness of galvanizing specified in referenced standards.
- C. Factory-Applied Universal Primer: Provide factory-applied polyamide epoxy primer, 2.0 -3.0 mils dry film thickness, PRIMERGALV by Duncan Galvanizing, or Tnemec 27 Typoxy meeting all requirements of this specification. Blast clean galvanized surfaces prior to application of primer in accordance with SSPC SP 6, including use of abrasive media, to achieve an anchor profile of 0.75 mils uniformly. Primer shall be applied in a controlled environment meeting applicable environmental regulations, and as recommended by coating manufacturer. Primer shall be compatible with field-applied finish coats specified in Section 09901, PAINTING.
- D. Galvanizing Application: Galvanize materials in accordance with specified standards and this specification. Galvanizing shall provide an acceptable substrate for applied coatings. The dry kettle process shall be used to eliminate any flux inclusions on the surface of the galvanized material.
- E. Metal Coating Application: Apply metal coatings over hot-dip galvanizing in accordance with specified requirements.
- 2.04 FINISHING (NON-GALVANIZED SURFACES)
- A. Shop Primer for Ferrous Metal not Indicated to be Galvanized: Fast-curing, lead- and chromate-free, zinc rich primer, Tnemec Zinc-Rich Primer 90-97 at 3.0 to 3.5 mils dry film thickness or equal, selected for good resistance to normal atmospheric corrosion, compatibility with finish paint systems shown, and capability to provide a sound foundation for field-applied topcoats despite prolonged exposure.
1. Surface preparation for shop coating shall be SSPC SP 6.
- B. Bituminous Paint: Bituminous-based paint for electrolytic isolation shall be cold applied black asphaltic mastic conforming to SSPC Paint 12, with no asbestos fibers.

### PART 3 - EXECUTION

#### 3.01 PREPARATION

- A. Coordinate and furnish anchorage devices, setting drawings, diagrams, templates, instructions, and directions for installation of concrete inserts, sleeves, anchor bolts, and miscellaneous items to be embedded or attached to concrete work, masonry work, or structural steel work.

#### 3.02 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners necessary for securing work of this Section to in-place construction. Include threaded fasteners for concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors required.
1. Number and sizes of washers at each bolted connection appearing in the finished work shall be subject to review and approval by Architect.

- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installation of work of this Section.
- D. Erect work square, plumb and true, accurately fitted, and with tight joints and intersections. All anchors, inserts and other members to be set in concrete or masonry shall be furnished loose by this trade to be built-into concrete and masonry by those trades. Avoid field cutting or drilling to greatest extent possible.
- E. Brace work rigid and secure to surrounding construction. Provide temporary bracing or anchors where required.
- F. Fit exposed connections accurately together to form hairline joints. Shop weld connections, except when work cannot be shop welded due to shipping size or galvanizing limitations.
- G. Field Welding: Comply with AWS D1.1 and AWS D1.3 for procedures of manual metal-arc welding, appearance and quality of welds, and correction methods for defective welds.
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap.
  - 3. Remove welding flux immediately.
  - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.
  - 5. Needle gun surfaces of welded connections which will be painted to restore surface profile.
- H. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.
- I. Where members other than expansion bolts or inserts are fastened into concrete, set such members in proprietary-type expanding grout manufactured specifically for such purpose. Use grouts strictly in accordance with manufacturer's directions. Form to receive members with galvanized metal sleeves, or other approved method to provide at least 1/2 in. clearance around entire perimeter. At exposed applications, hold expanding grout back 1/2 in. from finish surface and fill voids with Portland cement grout to match color and texture of surrounding concrete surface.
- J. Electrolytic Isolation: Where dissimilar metals are to come into contact with one another, isolate by application of a heavy coating of bituminous paint on contact surfaces in addition to shop coat specified above. Do not permit the bituminous paint in any way to remain on surfaces to be exposed or to receive sealant.

### 3.03 INSTALLATION

- A. Loose Steel Lintels: Furnish loose steel lintels required at masonry openings throughout project.
  - 1. Steel lintels shall be of sizes and configurations indicated and/or scheduled on the Drawings or, in lieu of such designations, as directed by the Architect. Lintels shall be adequate to carry the imposed loads with maximum deflection of L/360 span. Unless otherwise indicated, lengths of lintels shall be size of opening plus 16 in.
  - 2. Lintels in exterior walls shall be hot-dip galvanized after fabrication, as specified hereinbefore.

- B. Miscellaneous Items: Carefully review Drawings for miscellaneous metal items required by various trades but not specifically listed above, such as miscellaneous clip angles, miscellaneous steel bracketing, bracing, supports, and other miscellaneous metal items as indicated on Drawings, reasonably implied therefrom, or reasonably necessary for thorough completion of work.

3.04 REPAIRING, CLEANING, AND PROTECTION

- A. Touch-Up and Repair: For damaged and field-welded metal coated surfaces, clean welds, bolted connections and abraded areas.
1. At galvanized surfaces, apply organic zinc repair paint complying with requirements of ASTM A 780. Galvanizing repair paint shall have 65 percent zinc by weight, ZiRP by Duncan Galvanizing, Tnemec 90-97 Zinc-Rich Primer, or approved equal. Thickness of applied galvanizing repair paint shall be not less than coating thickness required by ASTM A 123 or ASTM A 153, as applicable. Touch-up of galvanized surfaces with aerosol spray, silver paint, bright paint, or aluminum paints shall not be acceptable.
  2. At factory-primed surfaces, touch-up finish in conformance with manufacturer's recommendations. Provide touch-up such that repair is not visible from a distance of 2 ft.

END OF SECTION

SECTION 07600

FLASHING AND SHEET METAL

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 WORK INCLUDED

- A. Provide all flashing and sheet metal work as required to complete the work of the Contract. Include, but do not limit to:
  - 1. Sheet metal flashings, drips, and counter-flashings at exterior walls.
  - 2. Sheet metal work at all other locations where the use of sheet metal may reasonably be inferred as necessary to make the work complete in the intent of providing thoroughly weathertight conditions at roofs, throughout.
  - 3. All other flashing and sheet metal work indicated.

1.02 RELATED WORK

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
  - 1. Section 05500, METAL FABRICATIONS.
  - 2. Section 07900, JOINT SEALERS.

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's printed product data, specifications, standard details, installation instructions, use limitations and recommendations for each material used. Provide certifications that materials and systems comply with specified requirements.
- B. Shop Drawings: Provide large scale shop drawings for fabrication, installation and erection of all parts of the work. Provide plans, elevations, and details of anchorages, connections and accessory items. Show sizes, material gages, profiles, splices and other details. Provide installation templates for work installed by others. Show all interfaces and relationships to work of other trades.
- C. Samples of sheet metal flashing, trim, and accessory items, in the specified finish. Where finish involves normal color and texture variations, include Sample sets composed of two or more units showing the full range of variations expected.
  - 1. 12 in. x 12 in. samples of factory-fabricated products exposed as finished Work. Provide complete with specified factory finish.
- D. Field Measurements: Take all necessary field measurements before preparation of shop drawings and fabrication. Do not delay progress of the job. If field measurements are not possible prior to fabrication, allow for field cutting and fitting.

1.04 QUALITY ASSURANCE

- A. Source: For each material type required for the work of this section, provide primary materials which are the product of one manufacturer. Provide secondary or accessory materials which are acceptable to the manufacturers of the primary materials.
- B. Installer: A firm with a minimum of three years experience in type of work required by this section and which is acceptable to the manufacturers of the primary materials.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials in manufacturer's sealed containers and rolls.
- B. Store indoors or under cover, on raised platforms, fully protected from damage.

1.06 COORDINATION

- A. Conference: Convene a preinstallation conference to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.
- B. Coordination: Perform work of this Section in coordination with other trades to provide the highest quality work.

1.07 PERFORMANCE REQUIREMENTS

- A. Thermal Movement: Provide systems and connections which allow for thermal movement resulting from ambient temperature range of 120°F.

1.08 WARRANTY

- A. Warranty the color coating of metal panels, trim, and other exposed elements against cracking, chipping, peeling and fade (not to exceed 5 N.B.S. units) for five years from the date of acceptance of the work.

PART 2 PRODUCTS

2.01 FLASHINGS

- A. Aluminum: Provide ASTM B 209, alloy 3003, temper H14 aluminum for aluminum flashing, and related work, where indicated on Drawings. Finish shall be two-coat 70% Kynar 500 or Hylar 5000 (PVDF). Color shall be custom color as selected by the Architect. Unless otherwise indicated, provide the following minimum thicknesses:
  - 1. Miscellaneous Flashing: 0.040 in. (unless otherwise noted).

2.02 RELATED MATERIALS

- A. Provide screws, bolts, and other accessories of same material and finish as sheet metal with which used.
- B. Fasteners: Same metal as flashing/sheet metal or other non-corrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.
- C. Bituminous Coating: SSPC - Paint 12, solvent-type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coat.
- D. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, non-drying, nonmigrating sealant.

- E. Elastomeric Sealant: Generic type recommended by manufacturer of metal and fabricator of components being sealed and complying with requirements for joint sealants as specified in Section 07900, JOINT SEALERS.
- F. Epoxy Seam Sealer: Two part noncorrosive metal seam cementing compound, recommended by metal manufacturer for exterior/interior nonmoving joints including riveted joints.
- G. Adhesives: Type recommended by flashing or sheet metal manufacturer for waterproof/weather-resistant seaming and adhesive application of flashing sheet.
- H. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gage required for performance.
- I. Roofing Cement: ASTM D 4586, asphaltic.

## 2.03 FLASHING AND SHEET METAL FABRICATION

- A. General: Shop fabricate work to the greatest extent possible. Fabricate work straight, plumb, level and square, and to provide the best watertight, weatherproof performance with proper expansion provisions in running work. Comply with referenced SMACNA Manual standards and details.
- B. Counterflashing Fabrication:
  - 1. Step Flashing: Unless indicated otherwise, fabricate step flashing to comply with SMACNA Manual, Plate 59, Figure B.

## 2.04 FINISHES

- A. Finish - Fluorocarbon Coating: Provide minimum 1.0 dry film thickness of thermo-cured fluorocarbon coating containing minimum 70% of one of the following resins, complying with AAMA 2605. Properly prepare substrates by inhibited chemical cleaning, conversion coating, and priming in compliance with coating manufacturer's instructions and recommendations.
  - 1. Hylar 5000; Ausimont USA, Inc., Morristown, NJ 07962-1838.
  - 2. Kynar 500; Atochem North America, Inc., Philadelphia, PA 19102.
- B. Colors: To be selected by the Architect from manufacturer's complete line of standard colors.

## PART 3 EXECUTION

### 3.01 INSPECTION OF SURFACES

- A. Carefully inspect surfaces to receive sheet metal for all conditions affecting sheet metal application and performance. Carefully check wood blockings, inserts, nailers, etc., for adequate anchorage. Defects shall be reported in writing to the Architect and sheet metal work shall not proceed until defects have been corrected.
- B. Beginning of work constitutes acceptance of conditions of surfaces to which this work is to be applied.

### 3.02 SHEET METAL WORKMANSHIP

- A. Provide sheet metal flashing and trim, and other work required for various conditions as specified and shown on Drawings.



- B. Provide accessory items essential to the completeness of each sheet metal installation, though not specifically shown or specified.
- C. Clean surfaces to be covered with sheet metal of dirt and other foreign matter before sheet metal work is started. Portions of sheet metal in contact with dissimilar metal, concrete, or masonry shall be given a coat of bituminous paint. Take extreme care to prevent direct contact of dissimilar metals.
- D. Except as otherwise shown on the approved shop drawings or specified herein, the workmanship of sheet metal work, method of forming joints, anchoring, cleating, provisions for thermal movement, etc., shall conform to the standard details and recommendations of the sheet metal producer and those of producer organizations and research institutions and associations governing the sheet metal used, in addition to the standards and details set forth in the SMACNA Manual.
  - 1. To greatest extent applicable, fabricate sheet metal components in shop, and thoroughly clean joints on both sides of the sheet metal work.
  - 2. Provide flat-locked seams, except where expansion provisions are required or where otherwise specified or detailed. Finish seams at least 1/2 in. in width.
  - 3. Double back exposed edges 1/2 in. to provide stiffness.
  - 4. Seal all working-joints in sheet metal work with low modulus sealant to assure positively weathertight conditions throughout, using materials as specified and with workmanship as specified under Section 07900, JOINT SEALERS.
  - 5. Fabricate and install work with lines and corners of exposed units true and accurate. Form exposed faces flat and free of buckles, excessive waves, and avoidable tool marks considering temper and reflectivity of metal. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant. Except as otherwise shown, fold back sheet metal to form a hem on concealed side of exposed edges.
  - 6. Conceal fasteners and expansion provisions where possible in exposed work, and locate so as to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

### 3.03 INSTALLATION OF ACCESSORIES

- A. Furnish and install accessories, as indicated, in strict accordance with the manufacturer's printed instructions.
- B. Manufactured Items: Install all manufactured items in accordance with manufacturer's recommendations. Work shall be installed true, free of distortion, oil canning or other visible damage. Provide anchorage to substrate in accordance with manufacturer's recommendations and approved shop drawings.
- C. Upon completion of work, sheet metal remaining exposed in the finished work shall be cleaned and left free from stains and blemishes.

END OF SECTION

SECTION 07840

FIRESTOPPING

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 WORK INCLUDED

- A. Provide all through penetration firestop system work required as part of this Contract in accordance with Commonwealth of Massachusetts State Building Code. Unless otherwise indicated, firestopping work shall include:
  - 1. All patching or repair or replacement of existing firestopping damaged as a result of trade work.
  - 2. New firestopping work as required for new work or renovation.
- B. Provide firestop systems consisting of a material, or combination of materials, installed to retain the integrity of fire-rated construction by maintaining an effective barrier against the spread of flame, smoke, or gases through openings in fire-rated barriers.
- C. Where specific firestop system is not indicated on the Drawings for a through penetration, the Contractor shall include proposed firestop system designs in submittals.
- D. Where there is no specific UL Firestop System available for a particular application, the firestopping contractor shall obtain from the firestop manufacturer a system drawing to be submitted to the Architect for approval prior to installation.

1.02 RELATED WORK

- A. Examine Contract Documents for requirements that affect Work of this Section. Other Specification Sections that relate directly to Work of this Section include, but are not limited to:
  - 1. Section 02070, SELECTIVE DEMOLITION.
  - 2. Section 16101, ELECTRICAL WORK.

1.03 SUBMITTALS

- A. Submit product data and MSDS for each type of firestop products to be used.
  - 1. Certification by firestopping manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs) and are nontoxic to building occupants.
- B. Product certificates signed by manufacturers of firestopping products certifying that their products comply with specified requirements.
- C. Product test reports from, and based on tests performed by, a qualified testing and inspecting agency evidencing compliance of firestopping with requirements based on comprehensive testing of current products.

#### 1.04 SYSTEM PERFORMANCE REQUIREMENTS

- A. General: Provide firestopping systems that are produced and installed to resist the spread of fire, according to requirements indicated, and the passage of smoke and other gases. Include the following:
1. Firestop all penetrations passing entirely through fire resistance rated wall and floor assemblies and other locations as indicated on the Drawings.
  2. Provide and install complete through-penetration firestopping systems which have been tested and approved by UL, FM, or third party testing agency.
  3. Provide and install complete through-penetration firestopping systems which are designed and approved for the specific through-penetrations to be firestopped.
  4. Provide and install firestop materials of thickness, width, and density, as required for the fire resistive ratings specified herein and/or as indicated on the Drawings.
  5. The installation of the correct firestop system is as important as the firestop system itself.
- B. F - Rated Through-Penetration Firestop Systems: Provide through-penetration firestop systems with F ratings indicated, as determined per ASTM E 814, but not less than that equaling or exceeding the fire-resistance rating of the constructions penetrated.
- C. T - Rated Through-Penetration Firestop Systems: Provide through-penetration firestop systems with T ratings, in addition to F ratings, as determined per ASTM E 814, where indicated and where systems protect penetrating items exposed to contact with adjacent materials in occupiable floor areas. T-rated assemblies are required where the following conditions exist:
1. Where firestop systems protect penetrations located outside of wall cavities.
  2. Where firestop systems protect penetrations located outside fire-resistive shaft enclosures.
  3. Where firestop systems protect penetrations located in construction containing doors required to have a temperature-rise rating.
  4. Where firestop systems protect penetrating items larger than a 4 in. diameter nominal pipe or 16 sq. in. in overall cross-sectional area.
- D. Fire-Resistive Joint Sealants: Provide joint sealants with fire-resistance ratings indicated, as determined per ASTM E 119 or UL 2079, but not less than that equaling or exceeding the fire-resistance rating of the construction in which the joint occurs.
- E. For firestopping exposed to view, traffic, moisture, and physical damage, provide products that do not deteriorate when exposed to these conditions.
1. For piping penetrations for plumbing and wet-pipe sprinkler systems, provide moisture-resistant through-penetration firestop systems.
  2. For floor penetrations with annular spaces exceeding 4 in. or more in width and exposed to possible loading and traffic, provide firestop systems capable of supporting the floor loads involved either by installing floor plates or by other means.
  3. For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation.
- F. For firestopping exposed to view, provide products with flame-spread values of less than 25 and smoke-developed values of less than 450, as determined per ASTM E 84.
1. For firestopping exposed to view, provide systems which result in a finished appearance similar to adjacent surfaces.

#### 1.05 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: Provide firestopping that complies with the following requirements and those specified under the "System Performance Requirements" article:

1. Firestopping tests are performed by a qualified testing and inspecting agency. A qualified testing and inspecting agency is UL, Warnock Hersey, or another agency performing testing and follow-up inspection services for firestop systems that is acceptable to authorities having jurisdiction.
  2. Through-penetration firestop systems are identical to those tested per ASTM E 814 under conditions where positive furnace pressure differential of at least 0.01 inch of water is maintained at a distance of 0.78 inch below the fill materials surrounding the penetrating items in the test assembly. Provide rated systems complying with the following requirements:
    - a. Through-penetration firestop systems correspond to those indicated by reference to through-penetration firestop system designations listed by UL in their "Fire Resistance Directory," by Warnock Hersey, or by another qualified testing and inspecting agency.
  3. Fire-resistive joint sealant systems are identical to those tested for fire-response characteristics per ASTM E 119 or UL 2079, under conditions where the positive furnace pressure differential is at least 0.01 inch of water, as measured 0.78 inch from the face exposed to furnace fire. Provide systems complying with the following requirements:
    - a. Fire-Resistance Ratings of Joint Sealants: As indicated by reference to design designations listed by UL in their "Fire Resistance Directory" or by another qualified testing and inspecting agency.
    - b. Joint sealants, including backing materials, bear classification marking of qualified testing and inspection agency.
- B. Installer Qualifications: Engage an experienced Installer who is certified by and listed in the FM Directory. Submit qualifications of individuals certified by FM testing as "Designated Responsible Individual".
1. The installer shall have the necessary experience, staff, and training to install classified firestopping systems with documented experience and references.
  2. It is the intent that all firestopping be performed by one contractor as a sole source.
- C. Single-Source Responsibility: Obtain through-penetration firestop systems for each kind of penetration and construction condition indicated from a single manufacturer.
1. Materials of different manufacture shall not be intermixed.
- D. Provide firestopping products containing no detectable asbestos as determined by the method specified in 40 CFR Part 763, Subpart F, Appendix A, Section 1, "Polarized Light Microscopy."
- E. Coordinating Work: Coordinate construction of openings and penetrating items to ensure that designated through-penetration firestop systems are installed per specified requirements.
- F. Request for Substitutions: Request for substitutions shall be submitted to Architect 10 working days prior to bid in order to evaluate comparison of substitute products. Submissions for substitutions must include the following:
1. Manufacturer's technical literature.
  2. Material Safety Data Sheets (MSDS).
  3. UL, FM, or independent laboratory system tests.

1.06 DELIVERY, STORAGE, AND HANDLING

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

1.07 PROJECT CONDITIONS

- A. Environmental Conditions: Do not install firestopping when ambient or substrate temperatures are outside limits permitted by firestopping manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Ventilation: Ventilate firestopping per firestopping manufacturers' instructions by natural means or, where this is inadequate, forced air circulation.
- C. Do not cover up those firestopping installations that will become concealed behind other construction until Owner's inspection agency and authorities having jurisdiction, if required, have examined each installation.

1.08 DEFINITIONS

- A. "Through-Penetration Firestop" is a material, device, or construction installed to resist, for a prescribed time, the passage of flame, heat, and gases through openings which penetrate the entire fire resistive construction in order to accommodate penetrating items. Incorporating the use of specific products installed in a specific manner, they shall only be installed in configuration for which they have been specifically tested and listed by Underwriters Laboratories (UL) and/or Factory Mutual (FM) as per UL 1479 and/or ASTM E 814.
- B. "F-Rating" is the time period that a through penetration firestop limits the spread of flame and hot gases through the fire resistive construction, including the penetrating elements, when tested in accordance with the time-temperature curve defined in ASTM E 119.
- C. "T-Rating" is the time period that a through-penetration firestop limits temperature rise through the fire resistive construction, including the penetrating elements, when tested in accordance with the time-temperature curve defined in ASTM E 119.

1.09 ENVIRONMENTAL REGULATIONS

- A. All materials shall be asbestos free and non-carcinogenic.
- B. Firestop materials shall contain no flammable or toxic solvents and shall not produce toxic or flammable outgassing during the drying or curing process.
- C. Firestop materials used shall not require solvent based chemicals for clean-up purposes.
- D. If required, hazardous disposal of firestop materials shall be strictly observed as noted on the individual MSDS.
- E. Water-based firestop materials shall be considered preferable over silicone or solvent based materials.

## PART 2 - PRODUCTS

### 2.01 FIRESTOPPING, GENERAL

- A. Compatibility: Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by firestopping manufacturer based on testing and field experience.
- B. Accessories: Provide components for each firestopping system that are needed to install fill materials and to comply with "System Performance Requirements" article in Part 1. Use only components specified by the firestopping manufacturer and approved by the qualified testing and inspecting agency for the designated fire-resistance-rated systems. Accessories include but are not limited to the following items:
  - 1. Permanent forming/damming/backing materials including the following:
    - a. Semi-refractory fiber (mineral wool) insulation.
    - b. Ceramic fiber.
    - c. Sealants used in combination with other forming/damming materials to prevent leakage of fill materials in liquid state.
    - d. Fire-rated formboard.
    - e. Joint fillers for joint sealants.
  - 2. Temporary forming materials.
  - 3. Substrate primers.
  - 4. Collars.
  - 5. Steel sleeves.
- C. Applications: Provide firestopping systems composed of materials specified in this Section that comply with system performance and other requirements.
- D. Materials shall conform to UL 1479 and ASTM E 814.
- E. Self-extinguishing damming materials shall be used, as specified by the manufacturer, as part of the designated firestop system.
- F. Firestop materials used shall be suitable and compatible with the penetrating item(s) including the surrounding materials.
- G. Firestop material which contains solvents that would attack plastics are not to be used.

### 2.02 FIRE-SAFING BOARD INSULATION AND ACCESSORIES

- A. Provide material tested, listed and labeled by UL and listed by UL in designs similar to applications indicated. Provide semi-rigid, non-asbestos mineral fiber board, rated noncombustible when tested according to ASTM E 136:
  - 1. k-Value: 0.25 at 75°F.
  - 2. Thickness: 4 in., unless otherwise indicated, and not less than thickness necessary to obtain required fire-rating.
  - 3. Density: Nominal 4 pcf.
  - 4. Product: U.S. Gypsum Co., Thermafiber Safing Insulation; Partek Insulation, Inc., Paroc Safing Insulation; Fibrex, Inc., FBX Fire Safing Insulation; or approved equal.

- B. Intumescent Tape: Pemko Hot Smoke Seal, adhesive-backed intumescent, Item HSS2000, manufactured by Pemko Mfg. Co., Memphis, TN, or equivalent manufactured by Dow Corning or Bio Fireshield.
- C. Light Gage Bent Metal Retainer: Provide 14 gage, galvanized steel bent angle with 1 in. upturned leg set, continuous, as indicated to retain safing insulation and intumescent tape.

#### 2.03 MINERAL WOOL

- A. Provide loose mineral wool, rated noncombustible when tested in accordance with ASTM E 136, free of asbestos and glass fiber, and suitable for in-place density of 6 pcf to 12 pcf.
  - 1. Hilti Mineral Wool; Hilti Corp.

#### 2.04 CAULK AND PUTTY

- A. Provide one of the following products, or Architect approved equal, that meet or exceed specified requirements:
  - 1. Biostop 500+; Bio Fireshield.
  - 2. Fire-Barrier Series; 3M Fire Protection Products.
  - 3. Flamesafe; W.R. Grace.
  - 4. CLK Adhesive Firestop; Nelson Firestop.
  - 5. STI SpecSeal S100.
  - 6. Hilti FS – One High Performance Sealant, Hilti CP 617 Firestop Putty Pad, or Hilti CP 618 Firestop Putty Stick; Hilti Corp.

#### 2.05 FIRESTOP MORTAR

- A. Prepackaged dry mix composed of a blend of inorganic binders, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogenous mortar.
- B. Provide one of the following products, or Architect approved equal, that meet or exceed specified requirements:
  - 1. Novasit K-10; Rectorseal Corp.
  - 2. KBS Mortar Seal; International Protective Coatings Corp.
  - 3. CMP Firestop Compound; Nelson Firestop.
  - 4. STI SpecSeal Mortar.
  - 5. Hilti CP 637 Firestop Mortar; Hilti Corp.

#### 2.06 FIRESTOP COLLARS

- A. Provide premanufactured fire protective pipe sleeves equal to one of the following products, or Architect approved equal, that meet or exceed specified requirements:
  - 1. Bio-Fireshield Firestop Collars; Rectorseal Corp.
  - 2. STI SpecSeal Firestop Collars.
  - 3. Hilti CP 643N Firestop Collar or CP 644 Firestop Retaining Collar for Plastic Pipe; Hilti Corp.

#### 2.07 FIRESTOP BAGS/PILLOWS

- A. Pillows/Bags: Re-usable, heat-expanding pillows/bags composed of glass-fiber cloth cases filled with a combination of mineral-fiber, water-insoluble expansion agents and fire-retardant additives.
- B. Provide one of the following products, or Architect approved equal, that meet or exceed specified requirements:

1. Firestop Pillows; Rectorseal Corp.
2. KBS Sealbags; W.R. Grace.
3. PLW Firestop Pillow; Nelson Firestop.
4. STI SpecSeal Pillows.
5. Hilti FS 657 – Fire Block; Hilti Corp.

2.08 WRAP STRIPS

- A. Single-component, elastomeric sheet with aluminum foil on one side. Provide one of the following products, or Architect approved equal, that meet or exceed specified requirements:
1. Biostop Wrap Strip; Bio Fireshield.
  2. SpecSeal Wrap Strip; STI.
  3. Fire Barrier FS195 Wrap Strip; 3M.
  4. Hilti CP 648E Endless Wrap Strip or CP 648S Single Wrap Strip; Hilti Corp.

2.09 COMPOSITE BOARDS

- A. Provide one of the following products, or Architect approved equal, that meet or exceed specified requirements:
1. Hilti CP 675T Firestop Board; Hilti Corp.
  2. Barrier Sheet Material; 3M or equivalent product by Johns Manville or Firetemp.

2.10 FIRE FOAM SEALANT

- A. Provide the following products that meet or exceed specified requirements:
1. Hilti CP 620 Fire Foam; Hilti Corp.

2.11 DAMMING/FORMING MATERIALS, FASTENERS, AND ANCHORAGE ACCESSORIES

- A. Provide damming/forming materials in accordance with manufacturer's recommendations.
- B. Provide fasteners and anchorage accessories complying with UL designs and other components and accessories as needed and as recommended by the firestopping material manufacturer.

2.12 MIXING

- A. For those products requiring mixing prior to application, comply with firestopping manufacturer's directions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other procedures needed to produce firestopping products of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of firestopping. Do not proceed with installation until unsatisfactory conditions have been corrected.



### 3.02 PREPARATION

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

### 3.03 INSTALLING THROUGH-PENETRATION FIRESTOPS

- A. General: Comply with the "System Performance Requirements" article in Part 1 and the through-penetration firestop manufacturer's installation instructions and drawings pertaining to products and applications indicated.
  - 1. Coordinate with fire protection and other trades to assure that all pipe, conduit, cable, and other items which penetrate fire rated construction have been permanently installed prior to installation of firestops and smoke seals.
  - 2. Schedule and sequence the work to assure that partitions and all other construction which would conceal penetrations are not erected prior to the installation of firestop and smoke seals.
  - 3. 1 hr. and 2 hr. rated columns and beams and wall assemblies enclosed in gypsum board shall be firestopped where gypsum board meets structure above.
  - 4. Provide minimum 1 hour rating for penetrations, expansion joints, and slab edge conditions at non-rated floor slabs.
  - 5. Comply with manufacturer's requirements regarding maximum size for annular spaces and materials to be used.
- B. Install forming/damming materials and other accessories of types required to support fill materials during their application and in the position needed to produce the cross-sectional shapes and depths required to achieve fire ratings of designated through-penetration firestop systems. After installing fill materials, remove combustible forming materials and other accessories not indicated as permanent components of firestop systems.
- C. Install fill materials for through-penetration firestop systems by proven techniques to produce the following results:
  - 1. Completely fill voids and cavities formed by openings, forming materials, accessories, and penetrating items.
  - 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
  - 3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.04 INSTALLING FIRE-RESISTIVE JOINT SEALANTS

- A. General: Comply with the "System Performance Requirements" article in Part 1, with ASTM C 1193, and with the sealant manufacturer's installation instructions and drawings pertaining to products and applications indicated.
- B. Install joint fillers to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability and develop fire-resistance rating required.
- C. Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint width that optimum sealant movement capability. Install sealants at the same time joint fillers are installed.
- D. Tool non-sag sealants immediately after sealant application and prior to the time skinning or curing begins. Form smooth, uniform beads of configuration indicated or required to produce fire-resistance rating, as well as to eliminate air pockets, and to ensure contact and adhesion of sealants with sides of joint. Remove excess sealant from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

3.05 FIELD QUALITY CONTROL

- A. Inspecting agency employed and paid by Owner will examine completed firestopping to determine, in general, if it is being installed in compliance with requirements.
- B. Inspecting agency will report observations promptly and in writing to Contractor and Architect.
- C. Do not proceed to enclose firestopping with other construction until reports of examinations are issued.
- D. Where deficiencies are found, repair or replace firestopping so that it complies with requirements.

3.06 CLEANING

- A. Clean off excess fill materials and sealants adjacent to openings and joints as work progresses by methods and with cleaning materials approved by manufacturers of firestopping products and of products in which opening and joints occur.
- B. Protect firestopping during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated firestopping immediately and install new materials to produce firestopping complying with specified requirements.

END OF SECTION

SECTION 07900

JOINT SEALERS

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 WORK INCLUDED

- A. Caulk and seal joints as indicated on the Drawings and as specified. Include, but do not limit to:
  - 1. Sealing of interior perimeter joints at newly installed door frames.
  - 2. Sealing of all openings and all joints at all door units (Smoke Doors) within the scope of this Contract including sealing of all surfaces above doors.
  - 3. All other interior sealing called for, or reasonably inferred from the Drawings.

1.02 RELATED WORK

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
  - 1. Section 02070, SELECTIVE DEMOLITION.
  - 2. Section 09901, PAINTING.

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's printed product data, specifications, standard details, installation instructions, use limitations and recommendations for each sealant material used. Provide certifications that sealant materials comply with specified requirements.
- B. Initial Selection Samples: Submit samples manufacturer's color charts showing complete range of colors, textures, and finishes available for each material used.
- C. Verification Samples: Submit actual representative samples of each sealant material that is to be exposed in the completed work. Show full color ranges and finish variations expected. Provide sealant samples having minimum size of 4 in. long.
- D. Test Reports: Provide certified reports for all specified tests.

1.04 COMPATIBILITY

- A. Provide sealant and sealant joint backing materials suitable for the use intended and compatible with the materials with which they will be in contact. Compatibility of sealant and accessories shall be verified by the sealant manufacturer.

1.05 QUALITY ASSURANCE

- A. Source: For each sealant material type required for the work of this section, provide primary materials which are the product of one manufacturer. Provide secondary or accessory materials which are acceptable to the manufacturers of the primary materials.

- B. Installer: A firm with a minimum of five years experience in type of work required by this Section and which is acceptable to the manufacturers of the primary materials.
- C. Mock-Ups: Prior to commencing the primary work of this Section, provide mock-ups at locations acceptable to Architect. Obtain Architect's acceptance of visual qualities. Protect and maintain accepted mock-ups throughout the remainder of the work of this section to serve as criteria for acceptance of the work.

#### 1.06 PROJECT CONDITIONS

- A. Weather: Perform work of this Section only when existing or forecasted weather conditions are within the limits established by manufacturers of the materials and products used.
- B. Substrates: Proceed with work only when substrate construction and penetration work is complete.

#### 1.07 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Materials under this Section shall be delivered to, and stored at, the job site in unbroken factory sealed containers with labels intact.

#### 1.08 WARRANTY

- A. Furnish joint sealant manufacturer's written single-source performance warranty that joint sealant work will be free of defects related to workmanship or material deficiency for five years from date of Substantial Completion of the Project.

### PART 2 - PRODUCTS

#### 2.01 GENERAL REQUIREMENTS

- A. Before installation check each sealant for compatibility with adjacent materials and surfaces and with indicated exposures. Select sealers which are recommended by manufacturer for each application indicated. Where exposed to pedestrian or vehicular traffic, provide sealants which are non-tracking and are strong enough to withstand the traffic without damage.
- B. Provide colors as selected by Architect from manufacturer's standard colors. Where specifically requested, provide custom color matches.

#### 2.02 NON-SAG POLYURETHANE SEALANT

- A. Provide multi-part, non-sag, polyurethane based elastomeric sealant, complying with ASTM C 920 Type M, Grade NS, Class 25, Fed. Spec. TT-S-00227E Class A, having Shore A hardness of 20 to 30, cured modulus of elasticity at 100% elongation of not more than 75 psi, and tear resistance of not less than 50 lbs./inch when tested according to ASTM D 624.
- B. Provide one of the following products that meet or exceed specified requirements:
  - 1. Sika Sikaflex 2c NS.
  - 2. Mameco International Vulkem 227.
  - 3. Sonneborn Sonolastic NP 2.
  - 4. Tremco Dymeric.
- C. Where joint requires 50% movement capabilities, provide Tremco Dymeric Plus, or equal product approved by Architect.

- D. Extent: Provide non-sag polyurethane sealant for all masonry to metal joints, and other joints not indicated to be sealed with another type of sealant.

## 2.03 MISCELLANEOUS MATERIALS

- A. Primer: Provide primer recommended by sealant manufacturer for surfaces to be adhered to.
- B. Bond Breaker Tape: Provide polyethylene or other plastic tape recommended by sealant manufacturer to prevent three-sided adhesion.
- C. Backer Rod: Provide compressible rod of durable nonabsorptive material recommended by sealant manufacturer for compatibility with sealant. Provide products of one of the following manufacturers:
  - 1. Backer Rod Manufacturing and Supply Co.
  - 2. Dow Chemical Co.
  - 3. W. R. Meadows, Inc.
  - 4. Williams Products, Inc.
  - 5. Woodmont Products, Inc.
- D. Provide miscellaneous materials of type that will not bleed through sealant, discolor surface, or produce other deleterious effects. Select size to provide compression to approximately 2/3 original width when in place. Provide backing material profile concave to the rear of the sealant and equipped with a bond-breaking film.

## PART 3 - EXECUTION

### 3.01 INSPECTION

- A. The Installer shall examine substrates and conditions under which this work is to be performed and notify Contractor, in writing, of conditions detrimental to proper completion of work. Do not proceed with work until unsatisfactory conditions are corrected. Beginning of sealant work means Installer's acceptance of joint surfaces and conditions.

### 3.02 PREPARATION

- A. Strictly comply with manufacturers' instructions and recommendations, except where more restrictive requirements are specified in this Section.
- B. Clean joint surfaces immediately before installation of sealants, primers, tapes and fillers. Remove substances which could interfere with bond. Etch or roughen joint surfaces to improve bond. Surfaces which have been given protective coatings and those that contain oil or grease shall be thoroughly cleaned with xylol or MEK solvent, with due precautions taken to minimize hazards.
- C. Unless otherwise indicated, use of sealants shall conform to ASTM C 962.
- D. Tape or mask adjoining surfaces to prevent spillage and migration problems.
- E. Prime surfaces as recommended by sealant manufacturer.

### 3.03 INSTALLATION

- A. Provide backer rods for sealants except where specifically recommended against by sealant manufacturers.
- B. Prevent three-sided adhesion by use of bond breaker tapes or backer rods.

- C. Force sealant into joints to provide uniform, dense, continuous ribbons free from gaps and air pockets. Completely wet both joint surfaces equally on opposite sides.
- D. Except in hot weather, make sealant surface slightly concave. Install sealants so that compressed sealants do not protrude from joints. Dry tool sealants to form a smooth dense surface. At horizontal joints form a slight cove to prevent trapping water.
- E. Provide sealants to depths indicated, or if not indicated, follow manufacturer's recommendations. For joints up to 3/8 in. width, depth of joint shall not exceed 1/2 in.; for joints larger than 1/2 in. width, depth of joint shall not exceed 5/8 in.

#### 3.04 EXTENT OF SEALANT WORK

- A. General Extent: Seal joints indicated, and all interior joints, seams, and intersections between dissimilar materials.
- B. Interior and Exterior Sealing: Without limitation, the work of this Section includes sealing the following:
  - 1. Perimeter of door frames.
  - 2. All openings and all joints at all door units (Smoke Doors) within the scope of this Contract including sealing of all surfaces above doors.

#### 3.05 CURING

- A. Cure sealants in strict compliance with manufacturers' instructions and recommendations to obtain highest quality surface and maximum adhesion. Make every effort to minimize accelerated aging effects and increase in modulus of elasticity.

#### 3.06 CLEANING AND PROTECTION

- A. Remove smears from adjacent surfaces immediately, as the work progresses. Exercise particular care to prevent smearing or staining of surrounding surfaces which will be exposed in the finished work, and repair any damage done to same as result of this work without additional cost to Owner.
- B. Remove and replace work that is damaged or deteriorated.
- C. Clean adjacent surfaces using materials and methods recommended by sealant manufacturer. Remove and replace work that cannot be successfully cleaned.
- D. Provide temporary protection to ensure work being without damage or deterioration at time of final acceptance. Remove protection immediately before final acceptance.

END OF SECTION

SECTION 08110

STEEL DOORS AND FRAMES

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 DESCRIPTION OF WORK

- A. Work Included: Provide steel doors and frames and related items as indicated on Drawings and as specified herein. Include, but do not limit to, the following:
  - 1. Provide new interior flush steel doors (labeled and fire rated) to replace existing doors.
  - 2. Provide new interior steel frames (labeled and fire rated) where existing frames are removed.
  - 3. Provide all modifications to existing steel frames where existing frames can be modified to accept new doors including re-certification of opening by approved agency to meet required fire rating and to meet approval of local authority having jurisdiction.
  - 4. Providing replacement glass in accordance with requirements of this Section and as indicated.

1.02 RELATED WORK

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that relate directly to work of this Section include, but are not limited to:
  - 1. Section 02070, SELECTIVE DEMOLITION; Selective demolition including removal and disposal of existing doors to the extent indicated.
  - 2. Section 07900, JOINT SEALERS; Sealing of door frame perimeter.
  - 3. Section 08710, DOOR HARDWARE; Templates and hardware schedules, including power door operator hardware.
  - 4. Section 09901, PAINTING; Field finishing of metal doors and frames indicated to be painted.

1.03 SUBMITTALS

- A. Product Data: Submit, for each type of door and frame specified, manufacturer's illustrated literature, including details of construction, materials, dimensions, hardware preparation, core, label compliance, sound ratings, profiles, and finishes.
- B. Shop Drawings: Show fabrication and installation of steel frames and of custom steel doors. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of door and frame hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.
  - 1. Note glass thickness and setting method to confirm that glazing frames and stops have been coordinated with glass and glazing requirements.
- C. Door Schedule: Use same reference designations indicated on Drawings, in Door Schedule, and in the Door Hardware Schedule in preparing schedule for doors and frames.

1.04      QUALITY ASSURANCE

- A.      Source: Provide doors and frames by a single manufacturer for the entire project.
- B.      For doors and frames installed in fire-rated assemblies and where indicated or required by authorities having jurisdiction, provide door and frame assemblies that comply with NFPA 80, and which have been tested, listed and labeled in compliance with ASTM E 152 by an independent agency acceptable to authorities having jurisdiction.
- C.      Fire Resistance Rated Glass: Provide products which have been tested in compliance with ASTM E 152 and ASTM E 163, UL-listed, and acceptable to local authorities having jurisdiction and which are labeled or listed by independent agencies acceptable to Architect.
  - 1.      Glass shall conform to Commonwealth of Massachusetts State Building Code.
  - 2.      Replacement glass shall match existing (Wired Glass) where indicated including in replacement doors.
  - 3.      NOTE: Massachusetts Code Commission has reviewed and given approval for glass in the replacement doors to match the wired glass in the existing doors and smoke partitions.
- D.      Labeling of Existing Steel Frames: Steel frames for use at fire rated openings shall bear the appropriate UL-Label in accordance with NFPA 70. Where existing frames are to be modified to accept new hardware and new doors, provide a qualified third party certification of opening and of frame assembly to verify the required rated assembly in accordance with the Contract Documents.
  - 1.      Cost of third party agency inspection and required fees for each opening will be borne by the Contractor as part of the work of this Section.
  - 2.      Third party agency shall be a qualified and licensed firm acceptable to Owner and Architect and local authorities having jurisdiction.
  - 3.      Provide qualifications of agency relative to fire door assemblies and certification.
  - 4.      Unless otherwise indicated, agency shall be thoroughly trained and qualified to provide field certification and shall have successfully completed the DHI Annual Fire Door Assembly Inspection Program (AFDAIP) and is qualified as a Fire Door Assembly Inspector (FDAI). Where applicable agency shall employ qualified certification technicians who have completed the Intertek Certification Program.

1.05      PRODUCT DELIVERY, STORAGE, AND HANDLING

- A.      Deliver, store, protect, and handle products in accordance with Section 01600, MATERIAL AND EQUIPMENT.
- B.      Provide doors, frames, and related items properly packaged and protected during shipping, handling, and storage to prevent damage.
- C.      Store materials indoors under cover on raised platforms, fully protected from dirt and moisture.

PART 2 - PRODUCTS

2.01      MANUFACTURERS

- A.      Manufacturer: Subject to compliance with requirements, provide standard steel doors and frames by one of the following, or approved equal:
  - 1.      Amweld Building Products
  - 2.      Ceco Corp.
  - 3.      Curries Company.
  - 4.      Republic Builders Products.



5.     Steelcraft Manufacturing Co.

2.02     MATERIALS

- A.     Hot-Rolled Steel Sheets: ASTM A 569/A 569M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- B.     Cold-Rolled Steel Sheets: ASTM A 366/A 366M, Commercial Steel (CS), or ASTM A 620/A 620M, Drawing Steel (DS), Type B; stretcher-leveled standard of flatness.
- C.     Metallic-Coated Steel Sheets: ASTM A 653/A 653M, Commercial Steel (CS), Type B, with an A40 (ZF120) zinc-iron-alloy (galvannealed) coating; stretcher-leveled standard of flatness.
- D.     Sound-Deadening Fill in Door Frames:
  - 1.     Grout: ASTM C 476, Fine Grout.

2.03     FLUSH STEEL DOORS

- A.     General: Provide doors of sizes, thicknesses, and designs indicated.
- B.     Interior Doors: ANSI 250.8 Level 2, heavy-duty, .042-inch- (1.3-mm-) minimum thickness cold-rolled steel faces, Model 2 (seamless), and ANSI A250.4 for Physical Performance Level B (Heavy Duty).
- C.     Single-Acting, Door-Edge Profile: Square edge, except where beveled edge is required for fire rated doors.
- D.     Vision Lite Systems: Manufacturer's standard kits consisting of glass pane moldings to accommodate glass thickness and size of vision panel indicated using fire resistant wired glass. Locate removable stops on the secure side of the door. Fabricate from 20 gauge minimum steel in profile shown on Drawings. Prime-paint same as door. Furnish with countersunk, tamperproof screws.
- E.     Astragals: As required by NFPA 80 to provide fire ratings indicated.
- F.     Installed Tolerances: Per NFPA 80.

2.04     PRESSED METAL FRAMES

- A.     General: Provide steel frames for doors, transoms, sidelights, borrowed lights, and other openings that comply with ANSI A250.8 and with details indicated for type and profile. Conceal fastenings, unless otherwise indicated. For exposed fasteners, provide countersunk flat head screws and bolts.
- B.     Interior Welded Frames: Fabricate frames from cold-rolled steel, with corners mitered, coped, welded and ground smooth. No knock-down frames will be permitted.
  - 1.     Fabricate frames for Level 2 doors from 0.053-inch (1.3 mm) thick cold-rolled steel.
- C.     Reinforce frames at finish hardware locations as specified in the Fabrication article.
- D.     Door Silencers: Drill stops to receive three (3) silencers on strike jambs of single-door frames and two (2) silencers on heads of double-door frames.
- E.     Plaster Guards: Provide 0.016-inch- (0.4-mm-) thick, steel sheet plaster guards or mortar boxes to close off interior of openings; place at back of hardware cutouts where mortar or other materials might obstruct hardware operation.

- F. Supports and Anchors: Fabricated from not less than 0.042-inch- (1.0-mm-) thick, electrolytic zinc-coated or metallic-coated steel sheet.
  - 1. Wall Anchors in Masonry Construction: 0.177-inch- (4.5-mm-) diameter, steel wire complying with ASTM A 510 (ASTM A 510M) may be used in place of steel sheet.
- G. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where zinc-coated items are to be built into exterior walls, comply with ASTM A 153/A 153M, Class C or D as applicable.

## 2.05 FIRE RESISTANT GLAZING FOR DOOR LITES

- A. Wired Glass: ASTM C 1036, UL Listed, Fire Rated polished transparent wired glass complying with ANSI Z97.1. Provide Type II - Patterned and Wired Glass, Class 1 - Clear, Quality q8 - Glazing, Form 1 - Polished Both Sides, and as follows:
  - 1. Thickness: Provide Wired Glass to match existing glass thickness or 1/4 inch thick whichever is greater.
  - 2. Pattern: To match existing.

## 2.06 FABRICATION

- A. Fabricate steel door and frame units to comply with ANSI A250.8 and to be rigid, neat in appearance and free from defects including warp or buckle. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at project site.
- B. Fabricate concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either cold- or hot-rolled steel.
- C. Clearances, Non-Fire-Rated Doors: Not more than 1/8 inch (3.2 mm) at jambs and heads, except not more than 1/4 inch (6.4 mm) between non-fire-rated pairs of doors. Not more than 3/4 inch (19 mm) at bottom.
- D. Clearances, Fire Doors: Provide clearances according to NFPA 80.
- E. Tolerances: Comply with SDI 117 "Manufacturing Tolerances Standard Steel Doors and Frames."
- F. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.
- G. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements in ANSI A250.6 and ANSI A115 Series specifications for door and frame preparation for hardware.
  - 1. Locate hardware as indicated on final shop drawings or, if not indicated, in accordance with DHI "Recommended Locations for Builder's Hardware on Standard Steel Doors and Frames" and ANSI A205.8; where there is a conflict between these two standards, consult the Architect.
  - 2. Reinforce doors and frames at finish hardware locations with steel reinforcing plates complying with ANSI A205.8-1998 for minimum thicknesses and dimensions.
    - a. Hinges: 0.123 inch (12 MSG)
    - b. Lock Face, Flush and Surface Bolts: 0.067 inch (14 MSG)
    - c. Surface-Applied Closers, Hold-Open Arms, and Exit Devices: 0.067 inch (14 MSG)
    - d. Pull Plates and Bars: 0.053 inch (16 MSG) on door only.

- e. Floor checking hinges and pivot hinges: 0.167 inch (7 MSG).
  - f. Kick and Push Plates: Reinforcing is not required.
  - g. Other Surface-Mounted Hardware: 0.053 inch (16 MSG).
  - h. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.
3. Locate hardware as indicated on final shop drawings or, if not indicated, in accordance with DHI "Recommended Locations for Builder's Hardware on Standard Steel Doors and Frames" and ANSI A205.8; where there is a conflict between these two standards, consult the Architect.
- H. Glazing Stops: Manufacturer's standard, formed from 0.032-inch- (0.8-mm-) thick steel sheet.
- 1. Provide nonremovable stops on secure side of interior doors for glass in doors.
  - 2. Provide screw-applied, removable, glazing stops on inside of glass in doors.
  - 3. Drill stops and frame to receive countersunk flat-head machine screws spaced uniformly not more than 12 inches (304.8 mm) on center. Furnish flat head machine screws of appropriate size for fastening stops to frame.

## 2.07 FINISHES

- A. Shop Painting, General: Clean, treat, and paint exposed surfaces of steel door and frame units, including galvanized surfaces.
- B. Preparation: Clean steel surfaces to remove mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint.
- C. Prime Finish: Manufacturer's standard, factory-applied coat of rust-inhibiting primer complying with ANSI A250.10 for acceptance criteria.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. General: Install steel doors, frames, and accessories in accordance with final shop drawings, manufacturer's installation instructions, and these specifications.
- B. Preparation: For frames which are to be installed in openings in masonry construction, fill frame solid with grout before erecting.
- C. Placing Frames: All frames shall be fully welded type. Comply with provisions of SDI-105 unless otherwise indicated. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.
  - 1. In masonry construction, provide at least three wall anchors per jamb; install adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Acceptable anchors include masonry wire anchors and masonry T-shaped anchors.
  - 2. In existing masonry construction, provide at least three completed opening anchors per jamb; install adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Set frames and secure to adjacent construction with bolts and masonry anchorage devices.
  - 3. In metal stud partitions, provide at least three wall anchors per jamb; install adjacent to location on hinge jamb and at corresponding heights on strike jamb. Attach wall anchors to studs with screws.
  - 4. Install fire-rated frames in accordance with NFPA 80.
  - 5. For openings 90 inches (2286 mm) or more in height, install an additional anchor at hinge and strike jambs.

- D.     Door Installation: Comply with ANSI A250.8. Fit hollow-metal doors accurately in frames, within clearances specified in ANSI A250.8. Shim as necessary to comply with SDI 122 and ANSI/DHI A115.1G.
1.     Install fire-rated doors with clearances specified in NFPA 80.
  2.     Smoke-Control Doors: Install to comply with NFPA 105.
  3.     Where existing frame is to remain, provide new hardware as scheduled, fitting existing frame as needed. Install new door leafs at locations indicated in accordance with NFPA 80. Where modifications are made to labeled frames, provide third party certification relative to required rating and label frames per referenced standards.
  4.     All door and door frame installations shall be acceptable to authorities having jurisdiction.

3.02     ADJUSTING AND CLEANING

- A.     Prime Coat Touch-up: Immediately after installation, sand smooth rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.
- B.     Final Adjustments: Just prior to final inspection, check and readjust operating hardware. Remove and replace defective work, including doors or frames that are warped, bowed, or otherwise unacceptable. Leave steel doors and frames undamaged and in proper operating condition.

END OF SECTION

SECTION 08710

DOOR HARDWARE

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 WORK INCLUDED

- A. Provide Door Hardware to provide correct functions for intended use. Provide related items and services as indicated on the Drawings and as specified. Furnish hardware schedules and templates as required for fabrication of doors and frames under other Sections. Provide hardware that complies with applicable codes and requirements of authorities which have jurisdiction.
- B. Coordinate hardware requirements for new doors and frames and hardware requirements of existing openings and frames with supplier of these items.
- C. Labeled Openings: For field modified hardware applied to existing steel frames comply with referenced standards relative to labeled openings. Where existing frames are to be modified to accept new hardware and new doors, provide a qualified third party certification of opening and of frame assembly to verify the required rated assembly in accordance with the Contract Documents.
  - 1. Cost of third party agency inspection and required fees for each opening will be borne by the Contractor as part of the work of this Section.
  - 2. Third party agency shall be a qualified and licensed firm acceptable to Owner and Architect and local authorities having jurisdiction.
  - 3. Provide qualifications of agency relative to fire door assemblies and certification.
  - 4. Unless otherwise indicated, agency shall be thoroughly trained and qualified to provide field certification and shall have successfully completed the DHI Annual Fire Door Assembly Inspection Program (AFDAIP) and is qualified as a Fire Door Assembly Inspector (FDAI). Where applicable agency shall employ qualified certification technicians who have completed the Intertek Certification Program.
- D. Drawings: Refer to Architectural Drawings for Door Schedules and for additional hardware requirements and hardware sets.

1.02 RELATED WORK

- A. Carefully examine all of the Contract Documents for requirements which affect the work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to, the following:
  - 1. Section 02070, SELECTIVE DEMOLITION.

1.03 QUALITY ASSURANCE

- A. Consultant: In order to qualify for work under this Section, supplying firm must employ on a fulltime basis a regular member of the Society of Architectural Hardware Consultants, or equal acceptable to the Architect, to prepare detailed hardware and keying schedules, check drawings, and supervise installation.

#### 1.04 REFERENCES

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
  - 1. Americans with Disabilities Act (ADA):  
Providing Accessibility and Usability for Physically Handicapped People.
  - 2. Door and Hardware Institute (DHI):  
Ref. 1 - Recommended Locations for Builders Hardware.
  - 3. MAAB – Massachusetts Architectural Access Board.
  - 4. NFPA 80/101 – National Fire Protection Association.

#### 1.05 SUBMITTALS

- A. Hardware Schedules: Within 10 days after written notice of the award of the Contract is received from the Contractor, prepare and submit to the Architect for approval six (6) copies of a complete Hardware Schedule. The Schedule shall be in DHI vertical format and shall include the manufacturers' numbers, types, sizes, and installation location of all hardware required to complete the job. The Hardware Schedule shall list the Specification Hardware Set Number next to the Schedule Heading Number and shall include a Door Index listing the Schedule Heading Number.
- B. Catalogue Cuts: Include with the Schedule two sets of catalogue cuts, together with product data sheets, of all hardware items.
- C. Templates: Furnish templates to door and frame manufacturers sufficiently in advance so as not to impede the progress of the work. However, no templates shall be issued or no materials ordered until the Hardware Schedule has been approved.
- D. Samples: Submit samples as requested by the Architect of any materials specified herein. Samples shall be clearly marked with the manufacturer's name and number and with the schedule number. Samples shall be returned to the supplier after being reviewed.

#### 1.06 WARRANTY/GUARANTEE

- A. Attention is directed to the provisions of the AGREEMENT regarding warranties for the Work.
- B. Manufacturers shall provide their standard warranties/guarantees for work under this Section. However, such warranties/guarantees shall be in addition to, and not in lieu of, all other liabilities which the manufacturers may have by law or by other provisions of the Contract Documents.

#### 1.07 MARKING AND PACKING

- A. All packages shall be legibly labeled indicating manufacturers numbers, types, sizes and Hardware Schedule reference number. All hardware shall be wrapped in paper and shall be packed in the same package as all screws, bolts and fastenings necessary for proper installation.

#### 1.08 DELIVERY AND STORAGE

- A. The Contractor shall receive, check against invoices, and store all hardware at the job.
- B. Delivery of hardware for the job shall be made in accordance with the Contractor's instructions.

- C. The Contractor shall furnish the supplier of the hardware with receipts for all hardware received.
- D. The Contractor shall provide adequate locked storage space with shelving for all items of hardware and shall be responsible for such hardware after receipt from the Supplier. He shall replace all lost or damaged hardware at his own expense.

#### 1.09 SPECIAL REQUIREMENTS

- A. Hardware Supplier shall determine conditions and materials for all the doors and frames for proper application of hardware.
- B. Hardware Supplier shall be responsible for the accuracy of the quantities, sizes, finish and proper hardware to be furnished, whether specifically mentioned or not, and shall be responsible for determining all details, such as hand of doors, bevel of locks, etc.
- C. All trim for door locks to hazardous areas such as Mechanical Rooms, Electrical Rooms, etc., shall have a tactile surface to comply with requirements of the Authority Having Jurisdiction.
- D. Tools for Maintenance: All special tools packed with hardware items shall be saved and turned over to the Owner upon completion of the work.
- E. Lock fronts, flush bolt faces, and strikes shall be beveled in accordance with manufacturers' standards.
- F. Handing of doors shall be verified by this Supplier.
- G. Hardware not specifically listed for a particular opening shall be the same as hardware scheduled for similar openings.
- H. Hardware shall match existing School facility hardware including the following:
  - 1. Locksets / Latchsets: Von Duprin to match existing.
  - 2. Panic Hardware: Von Duprin to match existing.

#### PART 2 - PRODUCTS

##### 2.01 QUALITY OF MATERIALS

- A. It is the responsibility of the Hardware Supplier to furnish the specified size and weight of hardware and fastenings, and the proper function of hardware in each case. If doors are labeled, proper UL approved hardware shall be supplied.
- B. Hardware shall be furnished as specified. Where only one manufacturer is listed, no substitution shall be allowed. Hardware for locksets/latchsets and for panic (exit) devices shall match existing (Von Duprin).

<u>Item</u>	<u>Manufacturers</u>
Electromagnetic Locks	(Sargent), Von Duprin, Locknetics
Electromechanical Closer-Holder Release Devices:	(Sargent), Von Duprin, Locknetics
Exit Devices, Rim Type	Von Duprin (NO SUBSTITUTES)
Exit Devices, Mortise Type	Von Duprin (NO SUBSTITUTES)
Butts/Hinges	(Stanley) Hager, PBB
Continuous Hinges	(Marker Architectural Products), McKinney Hinge, Hager, Roton
Locksets/Latchsets	Von Duprin (NO SUBSTITUTES)
Closers	(LCN)

<u>Item</u>	<u>Manufacturers</u>
Protection Plates	(Burns) Hager, Rockwood
Wall and Floor Stops/Silencers	(Burns) Hager, Rockwood
Overhead Stays and Holders	(Dorma) ABH, Glynn Johnson
Flush Bolts	(Door Controls, Intl.)
Gasketing	(NGP) Pemko, Zero
Automatic Door Bottoms/Rain Drips	(NGP) Pemko, Zero
Thresholds	(NGP) Pemko, Zero
Astragals	(NGP) Pemko, Zero

## 2.02 SPECIFIC HARDWARE ITEMS

- A. Electromagnetic Locks: Equal to Sargent 1584, 1585, 1586 as applicable for door application. Provide 24 VDC units. Hardware shall be UL-listed.
- B. Electromechanical Closer-Holder Release Devices: Equal to Sargent 351 EHT/EHTD as applicable for door application. Provide 24 VDC units. Hardware shall be UL-listed and shall conform to ANSI/BHMA A156.15. Provide applications as indicated including (1) Pull Side; (2) Pull Side – Double Egress. Provide 24 volt DC Power Supplies, switches, and transformers. Provide all arms and components as required, as scheduled, or as necessary for proper operation of each door unit and as acceptable to local authorities having jurisdiction.
- C. Exit Devices, Rim Type: Von Duprin Exit Devices for UL Fire Rated Doors. Rim devices shall be Von Duprin Series 98/99 Rim Exit Device meeting ANSI A 156.3, Grade 1. Provide all required trim, strikes, retrofit kits, and related items for a complete installation acceptable to local authorities having jurisdiction. Unless otherwise indicated, provide Sargent ETL Lever Design.
- D. Exit Devices, Mortise Type: Von Duprin Exit Devices for UL Fire Rated Doors. Mortise lock type devices shall be Von Duprin Series 88 Mortise Lock Exit Device meeting ANSI A 156.3, Grade 1. Provide all required trim, strikes, retrofit kits, and related items for a complete installation acceptable to local authorities having jurisdiction.
- E. Continuous Hinges: Marker Architectural Products, McKinney-Hinge, or Hager-Roton to comply with project requirements.

## 2.03 HINGES AND PIVOTS

- A. Hinges are to be of three-knuckle design, equipped with full radial thrust and lateral bearing assemblies. The bearing assemblies are to be permanently lubricated and sealed. All hinges are to have positive non-rising pins and a hole in the bottom tip for easy pin removal. Hinges shall have flush tips. Pins shall be through hardened and polished stainless steel.
- B. Number of hinges or pivots per door: Two hinges or pivots are to be provided for doors up to and including five feet (5') in height, and an additional hinge for each two-and-one-half feet (2-1/2'), of fraction thereof, of the height of the door.
- C. Hinges for exterior doors shall be Stanley CB1961R 5" x 4-1/2" x NRP x US32D.
- D. Hinges for interior doors shall be steel, Stanley CB Series, sized as follows:

<u>Door Thickness</u>	<u>Door Width</u>	<u>Hinge Weight</u>	<u>Hinge Height</u>
1-3/4 in.	Under 39 in.	Regular Weight	4-1/2 inches
1-3/4 in.	39-in. and over	Extra Heavy Wt.	5 inches



1. Width of hinges shall be determined by trim conditions.

E. Furnish Non-Removable Pins (NRP) at all interior locked doors that are reverse bevel.

F. Continuous Hinges shall be Hager Roton 1200-600-XHD.

## 2.03 LOCKSETS AND LATCHSETS

A. Unless noted otherwise, locksets and latchsets shall be heavy-duty cylindrical type, matching existing and as identified on the Hardware Sets included on the Drawings.

B. Locks and latches shall be 2-3/4 in. backset and shall have wrought box strikes.

C. Furnish strikes with extended lips where required to protect trim from being marred by latchbolt.

D. Provide cylinders for all locking devices on this job.

E. At pairs of doors, furnish strike lips 7/8" lip to center.

## 2.04 EXIT DEVICES

A. Exit Devices shall be Von Duprin "98" Series, in functions as listed in the sets below.

B. Lever trim shall match that of locksets.

C. Furnish Fire Rated Devices, as required. Furnish Cylinder Dogging (CD) for all non- fire rated devices.

## 2.05 CLOSERS

A. Surface Closers shall be LCN, non-sized, ADA approved, as follows:

1. Interior Doors: 4040 Series. Where "SC" is noted, furnish with built in spring/stop feature.

B. Unless specified otherwise, closers shall be mounted on that side of the opening least objectionable to the public view, unless otherwise specified. Provide parallel arm type at reverse bevel conditions.

C. Furnish all Door Closers with LCN 4040-18 Back Plates.

D. Furnish all closers with Full Metal Covers.

E. For all doors that can swing 180 degrees, template closers as required (unless built in stop is specified in the sets below).

F. Coordinating Systems shall be Dorma TS93GSR.

## 2.06 PROTECTION PLATES

A. Kick Plates shall be 8-in. high. Width of plate shall be 2-in. Less Width of Door on single doors, and 1-in. LWOD on pairs of doors.

B. Armor Plates shall be 36-in. high. Width of plates shall be as determined above.

C. Furnish all plates with opucssms.

2.07        STOPS AND STAYS (INTERIOR DOORS)

- A.      Furnish a stop or stay for each single door and each leaf of a pair of doors.
- B.      Floor Stops shall be Burns 535.
- C.      Where floor stops cannot be used, furnish an Overhead Stop ABH 9034.
- D.      Floor Stop and Holders shall be Rockwood 491.

2.08        FLUSH BOLTS

- A.      Flush Bolts shall be Door Controls International as follows:
  - 1.      Automatic Flush Bolts for Wood and Metal Doors – 842/942.
- B.      Furnish 80 Dustproof Strikes for all flush bolts.

2.09        THRESHOLDS

- A.      Thresholds for interior doors shall be NGP 513.
- B.      Thresholds for exterior doors shall be NGP 896S (silicon).
- C.      All thresholds shall be cut-in around mullions, frame members, stops, mullions (not butted up against) and shall provide a continuous surface across the full width of the opening from jamb to jamb. Strikes for exit device bottom rods shall be installed in field. All thresholds shall be properly sealed, grouted and/or caulked and set in a full bed of mastic.

2.10        GASKETING/AUTOMATIC DOOR BOTTOMS/ASTRAGALS

- A.      Gasketing shall be NGP 2525, applied at head and jambs.
- B.      Automatic Door Bottoms shall be NGP 320/423. If mortise type conflicts with material construction or other hardware, furnish 520, surface type.
- C.      Where an overlapping astragal is noted, furnish NGP 139SP (if not provided by Door Manufacturer).
- D.      Sweeps shall be NGP 200SA.
- E.      Furnish gasketing and door bottoms as noted herein and/or as noted on the Door Schedule.

2.11        MISCELLANEOUS

- A.      Silencers: All interior metal and wood frames shall be provided with door silencers, three (3) for each single door and two (2) for each pair of doors. Silencers shall be Burns 500/501.

2.12        FINISHES

- A.      Unless noted otherwise, finish of hardware shall be as follows:
  - 1.      Exit Devices, Protection Plates shall be satin stainless steel, US32D. Plates shall be BS 0.062 ga., 18-8 alloy.
  - 2.      Cylindrical Locksets, Flush Bolts, Floor Stops, etc, shall be satin chrome, US26D.
  - 3.      Closers shall be painted to match.
  - 4.      Thresholds shall be aluminum.

PART 3 – EXECUTION

3.01        MOUNTING POSITIONS

- A.      Mounting heights given are center line heights from finished floor.
- B.      Hinges: Position top hinge five inches below head, bottom hinge ten inches above finished floor and intermediate hinge equally spaced between top and bottom hinges.
- C.      Locksets and Latchsets: Unless shown otherwise, locate center of levers 40 inches above finished floor.
- D.      Overhead Closers:
  - 1.      Verify each head condition prior to furnishing door closers.
  - 2.      Surface-mounted on Door: Surface shoe application for standard operation and soffit plate application for parallel arms. Provide special shoe plates and brackets where specified or where required by job conditions.
  - 3.      Set hardware plumb, level and in exact alignment and location. Conceal and countersink fasteners wherever possible.

3.02        ADJUSTING, CLEANING AND PROTECTION

- A.      Adjust hardware items to work smoothly, easily and correctly.
- B.      Clean exposed surfaces using non-abrasive materials and methods recommended by the manufacturer of the hardware being cleaned. Remove and replace work which cannot be successfully cleaned, as judged solely by the Architect.
- C.      Provide temporary protection to ensure work being done without damage or deterioration at time of Final Acceptance. Levers shall be kept covered with heavy cloth, and other hardware shall be protected against damage until Substantial Completion of the Project. Remove protections and reclean as necessary immediately prior to Final Acceptance.

3.03        COMPLETION AND CONTINUED MAINTENANCE

- A.      Before completion of work of this Section, inspect work with Architect and adjust and correct work to leave operating parts in perfect operating condition, jointing to adjacent material tight, surface without blemishes or stains, work properly executed and complete, and defects and damaged work replaced or corrected.

3.04        HARDWARE SETS

- A.      Each Hardware Set listed below represents the complete hardware requirements for one opening (single door or pair of doors). Furnish the quantities required of each set for the work.
- B.      Refer to the Hardware Sets and Door Schedules included as part of the Contract Drawings.

END OF SECTION

SECTION 08800

GLASS AND GLAZING

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS, and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.

1.01 WORK INCLUDED

- A. Furnish and install glass and glazing, as indicated on Drawings and as specified herein. Include, but do not limit to glass and glazing for the following:
  - 1. Exterior and interior steel doors as scheduled.
  - 2. All other glass and glazing called for, or reasonably inferred from the Drawings.

1.02 RELATED WORK

- A. Examine Contract Documents for requirements that affect Work of this Section. Other Specification Sections that directly relate to Work of this Section include, but are not limited to:
  - 1. Section 08110, METAL DOORS AND FRAMES; Metal doors to be glazed.

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's printed product data, specifications, standard details, installation instructions, use limitations and recommendations for each material used. Provide certifications that materials and systems comply with specified requirements.
- B. Initial Selection Samples: Submit samples of each glass and glazing material showing complete range of colors, textures, and finishes available for each material used.
- C. Verification Samples: Submit representative samples of each glass and glazing material that is to be exposed in completed work. Show full color ranges and finish variations expected. Provide glass samples having minimum size of 144 sq. in. and 6 in. long samples of sealants and glazing materials.
- D. Test Reports: Provide certified reports for specified tests.

1.04 PERFORMANCE REQUIREMENTS

- A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.
- B. Glass Design: Glass thickness designations indicated are minimums and are for detailing only. Confirm glass thicknesses by analyzing Project loads and in-service conditions. Provide glass lites in the thickness designations indicated for various size openings, but not less than thicknesses and in strengths (tempered) required to meet or exceed the following criteria:

- C. Glass Thicknesses: Select minimum glass thicknesses to comply with ASTM E 1300, according to the following requirements:
1. Specified Design Wind Loads: As specified in Section 08420.
  2. Probability of Breakage for Vertical Glazing: 8 lites per 1000 for lites set vertically or not more than 15 degrees off vertical and under wind action.
  3. Minimum Glass Thickness for Exterior Lites: Not less than 6.0 mm.
- D. Thermal Movements: Provide glazing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures acting on glass framing members and glazing components. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120°F (67°C), ambient; 180°F (100°C), material surfaces.
- E. Thermal and Optical Performance Properties: Provide glass with performance properties specified based on manufacturer's published test data, as determined according to procedures indicated below:
1. For monolithic-glass lites, properties are based on units with lites 6.0 mm thick.
  2. For insulating-glass units, properties are based on units 1-inch thick for overall unit and for each lite 6.0 mm thick and a nominal 1/2-inch- (12.7-mm-) wide interspace.
  3. Center-of-Glass Values: Based on using LBL-44789 WINDOW 5.0 computer program for the following methodologies:
    - a. U-Factors: NFRC 100 expressed as Btu/ sq. ft. x h x deg F (W/sq. m x K).
    - b. Solar Heat Gain Coefficient: NFRC 200.
    - c. Solar Optical Properties: NFRC 300.

#### 1.05 QUALITY ASSURANCE

- A. Source: For each glass and glazing type required for work of this Section, provide primary materials which are products of one manufacturer. Provide secondary or accessory materials which are acceptable to manufacturers of primary materials.
- B. Installer: A firm with a minimum of three years experience in type of work required by this Section and which is acceptable to manufacturers of primary materials.
- C. Referenced Standards: Work and materials shall meet or exceed the requirements of all referenced standards. Include Commonwealth of Massachusetts State Building Code, ANSI Z97.1, ASTM E 774, and GANA Glazing Manual.
- D. Safety Glass: At hazardous locations including, but not limited to those listed below and as defined in the Commonwealth of Massachusetts State Building Code, provide laminated glass.
1. All glazing included as part of this Contract.

#### 1.06 TESTS

- A. Preconstruction Sealant Test: Submit samples of materials to be used to glazing sealant manufacturer to determine sealant compatibility. Include samples of glass, gaskets, glazing materials, framing members, and other components and accessories of glazing work. Test in accordance with ASTM C 794 to verify what type of primers (if any) are required to ensure sealant adhesion to substrates.
1. Submit minimum of nine pieces of each type and finish of framing member, and nine pieces of each type, class, kind, condition, and form of glass, including monolithic, laminated, and insulating glass for adhesion tests.

2. Provide manufacturer's written report and recommendations regarding proper sealant choice and use.

#### 1.07 PROJECT CONDITIONS

- A. Weather: Perform work of this Section only when existing or forecasted weather conditions are within limits established by manufacturers of materials and products used.
- B. Temperature Limits: Install sealants only when temperatures are within limits recommended by sealant manufacturer, except, never install sealants when temperatures are below 40°F.

#### 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials and products in unopened, factory labeled packages. Store and handle in strict compliance with manufacturer's instructions and recommendations and GANA Manual.
  1. Protect materials from moisture, sunlight, excess heat, sparks and flame.
  2. Sequence deliveries to avoid delays but minimize on-site storage.

#### 1.09 WARRANTY

- A. Provide a written warranty, signed by the manufacturer, installer, and Contractor, agreeing to repair or replace work which exhibits defects in materials or workmanship. "Defects" is defined to include, but not limited to, leakage of water, abnormal aging or deterioration, failure of hermetic seals, edge separation or delamination of laminated glass, peeling, cracking, or crazing of metallic coatings, and failure to perform as required. Include requirement for removal and replacement of covering and connected adjacent work. Provide warranty periods standard with the manufacturer.
  1. Insulating glass shall have a 10 year warranty against failure.

### PART 2 - PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS/FABRICATORS

- A. Glass: Provide glass products of one of the following manufacturers/fabricators that meet or exceed the requirements of these specifications:
  1. AFG Industries.
  2. Falcomer Glass Industries.
  3. Guardian Industries.
  4. Cardinal Glass.
  5. Libbey Owens Ford.

#### 2.02 GLASS MATERIALS AND PRODUCTS

- A. Clear Tempered Safety Glass: ASTM C 1048, Condition A-Uncoated, Type I - Transparent, Flat, Class 1-Clear, Quality q3, Kind FT, complying with ANSI Z97.1. Thickness 1/4 in. unless otherwise indicated as required.
- B. Laminated Safety Glass: Provide two glass panes of equal thickness, laminated together with a polyvinyl butyl interlayer, conforming to ASM C 1172, and as follows:
  1. Interlayer Color: Clear.
  2. Interlayer Material: Provide Monsanto "Saflex" or DuPont "Butacite", 0.030 in. thick.

- C. Insulating-Glass Units, General: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, and complying with ASTM E 774 for Class CBA units and with requirements specified in this Article and in Part 2 "Insulating-Glass Units" Article.
1. Overall Unit Thickness and Thickness of Each Lite: Dimensions indicated for insulating-glass units are nominal and the overall thicknesses of units are measured perpendicularly from outer surfaces of glass lites at unit's edge.
  2. Sealing System: Dual seal.
  3. Spacer Specifications: Aluminum space, with mill or clear anodic finish. Provide manufacturer's standard corner construction.

## 2.03 GLAZING MATERIALS AND PRODUCTS

- A. General: Provide sealants and gaskets with performance characteristics suitable for applications indicated. Ensure compatibility of glazing sealants with laminated glass interlayers, plastic glazing, and with any other surfaces in contact.
- B. General Glazing and Cap Bead Sealant: Provide sealant with maximum Shore A hardness of 50. Provide one of the following:
1. Dow Corning 795.
  2. General Electric Silglaze N 2500 or Contractors SCS-1000.
  3. Tremco Proglaze.
- C. Weather Seal Sealant: Provide non-acid curing sealant with movement range  $\pm 50\%$ , ASTM C 719. Provide one of the following:
1. Dow Corning 795.
  2. General Electric Silpruf.
  3. Tremco Spectrum 2.
- D. Dense Elastomeric Compression Seal Gaskets: Provide molded or extruded neoprene or EPDM gaskets, Shore A hardness of  $75 \pm 5$  for hollow profile, and  $60 \pm 5$  for solid profiles, ASTM C 864.
- E. Cellular, Elastomeric Preformed Gaskets: Provide extruded or molded closed cell, integral-skinned neoprene, Shore A  $40 \pm 5$ , and 20% to 35% compression, ASTM C 509.
- F. Preformed Glazing Tape: Provide solvent-free butyl-polyisobutylene rubber with 100% solids content complying with AAMA A 804.1. Provide preformed glazing tape in extruded tape form. Provide one of the following:
1. Protective Treatments 303 or 606.
  2. Tremco Preshimmed 440.
  3. Woodmont Chem-Tape 40.
- G. Setting Blocks: Provide neoprene or silicone blocks with Shore A hardness of 80-90. Provide products certified by manufacturer to be compatible with silicone sealants.
1. Shims: For shims used with setting blocks, provide same materials, hardness, length and width as setting blocks.
- H. Edge Blocks: Provide neoprene or silicone as required for compatibility with glazing sealants. Provide blocks with Shore A hardness of  $55 \pm 5$ .

- I.      Miscellaneous Glazing Materials: Provide sealant backer rods, primers, cleaners, and sealers of type recommended by glass and sealant manufacturers.

### PART 3 - EXECUTION

#### 3.01      INSPECTION

- A.      The Installer/Glazier shall examine substrates, supports, and conditions under which this work is to be performed. Notify Contractor in writing, outlining conditions detrimental to proper completion of work. Do not proceed with work until unsatisfactory conditions are corrected. Beginning of installation will be construed as glazier accepting substrates and conditions.

#### 3.02      INSTALLATION

- A.      General Installation Requirements: Strictly comply with manufacturer's instructions and recommendations, except where more restrictive requirements are specified in this Section. Comply with GANA Manual. Do not glaze when ambient temperature is below 40°F.
1.      Prior to installing glass, clean glazing channels and framing members.
  2.      Remove coatings not completely bonded to substrates.
  3.      Remove lacquer from metal surfaces where in contact with sealants.
  4.      Protect glass from edge damage at all times. Use roller blocks and suction cups.
  5.      Replace glass with edge damage or other imperfections which could weaken glass.
  6.      Install setting and side blocks in locations recommended by referenced standards, and as required to prevent glass displacement.
  7.      Center glass in openings. Provide 1/2 in. minimum glass bite and 1/8 in. edge clearances.
  8.      Install glass and glazing in such a manner as to allow for easy replacement of glass and glazing without dismantling of frames.
  9.      Install glazing tapes and gaskets. Prepare for exterior cap seal.
  10.     Prevent metal to glass contact at all times. Protect edges of insulated units from moisture and solvents.
  11.     Clean, prime, and install stops.
  12.     Cap seal exterior joints between glazing and framing with a uniform fillet of clear, silicone sealant. Slope cap seal from glass to framing. Provide maximum 1/16 in. clearance between top of frame and top of cap seal.

#### 3.03      CLEANING AND PROTECTION

- A.      Clean exposed surfaces using manufacturer recommended materials and methods. Remove and replace work which cannot be successfully cleaned. Clean glass and framing members frequently to protect from build-up of harmful construction contaminants.
- B.      Touch-up damaged coatings and finishes. Eliminate visible evidence of repair.
- C.      Re-clean glass within one week of final acceptance.
- D.      Provide temporary protection at all times during course of work, and immediately after completion to ensure work of this Section is not damaged or deteriorated in any way at time of final acceptance. Remove temporary protections and reclean as necessary immediately prior to final acceptance.
- E.      Remove and replace broken, chipped, cracked, or otherwise damaged glass.



3.04 GLASS SCHEDULE

A. Provide following glass types. Types are keyed to Drawings:

1. Type 1 Glass: 1 in. clear insulating safety glass, tempered.
2. Type 2 Glass: 1/4 in. clear tempered safety glass.

END OF SECTION

SECTION 09901

PAINTING

(Filed Sub-bid Required)

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

1. Sub-bids for work under this Section shall be for the complete Work of this Section and shall comply with the requirements of M.G.L., c. 149, §44F. and shall be filed in a sealed envelope with the MILLBURY PUBLIC SCHOOLS (AWARDING AUTHORITY) at a time and place as stipulated in the "INVITATION FOR BIDS".

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

Name of  
Sub-Bidder:

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Project: MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE

Millbury Jr./Sr. High School  
12 Martin Street  
Millbury, Massachusetts 01527

Elmwood Street Elementary School  
40 Elmwood Street  
Millbury, Massachusetts 01527

Sub-Bid for: Section 09901, PAINTING

2. Each sub-bid submitted for work under this Section shall be on forms furnished by the AWARDING AUTHORITY as required by Section 44F of Chapter 149 of the General Laws, as amended. Sub-bid forms are included in this Project Manual or may be obtained at the office of the Architect.
3. Sub-bids filed with the AWARDING AUTHORITY shall be accompanied by BID BOND or CASH or CERTIFIED CHECK or TREASURER'S CHECK or CASHIER'S CHECK issued by a responsible bank or trust company payable to MILLBURY PUBLIC SCHOOLS in the amount of five percent of the sub-bid. A sub-bid accompanied by any other form of bid deposit than those specified will be rejected.

1.02 SUB-BID REQUIREMENTS

- A. Each Sub Bidder shall list in Paragraph E of the "Sub Bid Form" the name and bid price of each person, firm or corporation performing each class of work or part thereof for which the Section of the Specifications for the Sub-Trade requires such listing, provided that, in the absence of as contrary provision in the Specifications, any Sub Bidder may, without listing any bid price, list his own name in said Paragraph E for each such class of work or part thereof and perform that work with persons on his own payroll, if such Sub Bidder, after Sub Bid openings, shows to the satisfaction of the Awarding Authority, that he does customarily perform such class of work or the part thereof with persons on his own payroll and is qualified to do so. This Section of the Specifications requires that the following class(es) of work shall be listed in Paragraph E under the conditions herein.

CLASS OF WORK

REFERENCE PARAGRAPHS

None Required Under This Section

1.03 DESCRIPTION OF WORK

- A. Work Included: Provide all labor, materials, and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Provide painting and finishing work throughout interior and exterior of Project as indicated and scheduled on the Drawings and as specified.
  2. Examine Contract Documents to determine full extent of painting and finishing work required. Materials provided under other Sections that need painting or finishing and are left unfinished under requirements of other Specification Sections, shall be painted and finished to completion under work of this Section, unless specifically scheduled herein to be left unfinished.
  3. Preparatory work of materials and surfaces to receive paint beyond that specified to be done as work of other Sections, shall be included as work of this Section.
- B. Painting Contractor shall be responsible for insuring that all coatings and the application of all coatings conform to all federal, state, and local regulations, including VOC/VOS rules at the time of application.
- C. Alternates: Alternates #1, #2, #3, #4, #5, and #6; Refer to Section 01030, ALTERNATES and the Drawings.
- D. Items to Be Installed Only: Not Applicable
- E. Items To Be Furnished Only: Not Applicable.
- F. Reference To Drawings: Work specified in PAINTING is subject to provisions of Section 44A to 44L inclusive, of Chapter 149 of General Laws of the Commonwealth of Massachusetts, as amended, and are indicated on the following Contract Drawings:
1. Drawings T-1.0 and T-1.1, Drawings A-0.1 through A-0.5, Drawings A-1.1 through A1.7, Drawings A2.1 through A2.5, and Drawing E-1.1.
  2. This Subcontractor shall carefully inspect all Drawings, not just those pertaining particularly to his sub-trade unless specifically called for otherwise, regardless of where among the Drawings it appears.
- G. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 01045, CUTTING AND PATCHING.

2. Section 05500, METAL FABRICATIONS.
3. Section 08110, METAL DOORS AND FRAMES.
4. Section 16101, ELECTRICAL WORK; Factory finish and prime coats on electrical fixtures and equipment.

#### 1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's printed product data, specifications, use limitations and recommendations for each material used. Provide certifications that materials and systems comply with specified requirements.
- B. Initial Color Selection Samples: Submit manufacturer's standard color charts or chips showing complete range of colors, textures, and finishes available for each paint system used.
- C. Verification Samples: After initial selection of colors, submit representative samples of each paint system color that is to be exposed in the completed work. Show full color ranges and finish variations expected. Provide texture to simulate actual conditions. Define each separate coat, including block fillers and primers. Resubmit samples until required sheen, color, and texture have been approved. Provide samples as follows:
  1. Paint Samples for Smooth Surfaces: Provide samples of painted finishes on gypsum drywall or Masonite board having minimum size of 144 sq. in.

#### 1.05 QUALITY ASSURANCE

- A. Source: Provide primers and undercoat paint produced by same manufacturer of finish coats for each substrate.
- B. Coordination: Review other Specification Sections where primers are provided to ensure compatibility with finish coatings provided under this Section.
- C. Mock-Ups: Prior to commencing work of this Section, provide 100 sq. ft. mock-ups of each color, paint system, and substrate at locations acceptable to the Architect. Obtain Architect's acceptance of visual qualities. Refinish mock-ups until Architect's acceptance is obtained. Maintain acceptable mock-ups throughout the remainder of the work to serve as criteria for acceptance of the work. Acceptable mock-ups may be incorporated into the finish work.
- D. The painting subcontractor shall submit qualifications indicating his experience as a painting contractor. These qualifications shall include a list of projects successfully completed, similar in size and scope to this Project.

#### 1.06 TESTS

- A. The Owner may employ an independent testing agency to perform tests, evaluations, and certifications of products used. Cooperate and permit samples of materials to be taken as they are used.

#### 1.07 PROJECT CONDITIONS

- A. Temperature, and Humidity: Perform work only when existing and forecasted weather conditions fall within limits established by manufacturers of materials used.
  1. Indoor Temperature: Maintain indoor temperature at 65°F. during application and drying of paints.
- B. Substrates: Proceed with work only when substrate construction and penetration work is complete.

- C. Lighting: Since lighting conditions can alter appearances of finish painting work, perform work of this Section under lighting conditions simulating permanent lighting system to the greatest extent possible.
- D. Where painting operations require the use of interior paints and coatings which are not latex or acrylic based materials (i.e. solvent-based materials) or paint or coating materials which when applied will produce fumes or vapors which may adversely affect the occupants of the building, the Contractor shall schedule this painting work (applying solvent-based or oil-based paints and coatings) during premium time (overtime), at no additional cost to the Owner, so as not to affect other contractors working on-site.
- E. A room shall be assigned for the storage of painting tools and materials. The floor shall be properly protected with drop cloths or building paper. Paint shall be mixed in suitable containers, and necessary precautions shall be taken to prevent fire. This room shall be locked at the completion of each day's work. The Contractor shall have duplicate keys.
- F. Protect all adjacent surfaces from damage by paint and provide all drop cloths and masking to accomplish the same.
- G. Do not use any plumbing fixture or pipe for the disposal of waste materials. Carry all water required to the mixing room and dump all waste materials in containers outside the building. Remove oily rags and other combustible waste materials from the building daily.
- H. Removal of Accessories
  - 1. The General Contractor will remove and replace all finished hardware applied to doors, except butts, and shall be responsible for the removal and replacement of all accessories, plates and fixtures of other trades, as necessary for the satisfactory completion of work under this Section.
  - 2. Doors already in place shall be removed and the top and bottom edges finished with two (2) coats of specified finish applied prior to finishing face of doors. Doors shall be replaced after edges are dry.
  - 3. In no case shall there be any attempt to paint around finish hardware or other new or existing removable items which are already in place.

#### 1.08 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle products in accordance with Section 01600, MATERIAL AND EQUIPMENT.
- B. Deliver materials in unopened original containers bearing manufacturer's labels.
- C. Store materials in fully sealed containers, outside the building, preferably in exterior storage shed, well ventilated, and with a minimum ambient temperature of 45°F. Oily rags and waste must be removed from the building every night, and under no circumstances will be allowed to accumulate. Each space containing stored paint materials shall be provided with UL labeled fire extinguisher of suitable type, class, and capacity.

#### 1.09 COORDINATION

- A. Work under this section shall be properly coordinated with the work of other sections to assure the steady progress of all the work of the Contract.

### PART 2 - PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. Paints and Coatings: Provide first quality products as manufactured by one of the following manufacturers that meet or exceed specified requirements:

1. Benjamin Moore and Co. (Benjamin Moore).
2. Tnemec Inc. (Tnemec).
3. Devoe and Raynolds (Devoe).
4. The Sherwin-Williams Company (S-W).
5. Pratt and Lambert (P & L).
6. PPG.

- B. Materials used shall be best grade products of their respective kinds. The Painting Schedule is based on products the above-named manufacturers. These are specified to establish a standard of quality and kind of material desired. Provide these products or equals as approved by Architect.
- C. Note: If substitutes are proposed, submit complete schedule showing materials specified and equivalent materials proposed as substitutes. Provide complete manufacturer's product data on proposed materials. Substitutes must be approved by Architect before commitment for materials is made.
- D. Assume full responsibility for proper performance of materials, for method of application, and for compatibility of materials applied over shop coats or other coats previously applied, including but limited to primers, sealers, preservative treatments, etc. Notwithstanding specific schedules in this Section, select primers which have been verified to be appropriate for each of the substrates and finishes encountered.
- E. Provide miscellaneous painting materials such as linseed oil, shellac, turpentine, and thinner of the highest quality.

## 2.02 COLORS

- A. Provide colors in accordance with approved Color Schedule. Colors designations indicated in the Color Schedule are associated with a particular paint or coating manufacturer's custom and/or standard line of available colors.
- B. Paint or coatings of other manufacturers as listed herein will be acceptable provided that the paint or coating meets or exceeds the quality of paint or coating specified and that the paint or coating may be tinted as required to provide an acceptable color match and appropriate degree of gloss, acceptable to the Architect.
- C. Tint and match colors to the satisfaction of Architect. Provide facilities for comparison and adjustment of colors.
- D. No limit is placed on number of colors that may be required; however the following maximum number of colors may be used in any one room, area, or surface:
1. Three colors.

## PART 3 - EXECUTION

### 3.01 INSPECTION AND GENERAL PREPARATION

- A. Inspect surfaces to receive finishes to ensure they are in proper condition to receive work under this Section.
- B. If surfaces are not thoroughly dry, or if surfaces cannot be put in proper condition to receive paint or other finish by customary cleaning methods, sanding, or spackling, notify Architect in writing.
- C. Commencing work on any surface will be construed as acceptance of the surface as being satisfactory to properly receive the work of this Section.

- D. Furnish and lay drop cloths in all rooms and areas where painting and finishing is being done, to adequately protect flooring and other work from all damage during the painting work.
- E. Remove hardware, accessories, device plates, lighting fixtures, factory finished work, and similar items; or provide ample in-place protection. Use skilled mechanics for removal, resetting, and protection.
- F. Cleaning: Do not paint over dirt, dust, rust, grease, moisture, or other contaminants detrimental to the formation of a durable paint finish. Clean surfaces thoroughly prior to painting in any given area.
- G. Touch up bare or abraded spots on surfaces with shop or existing finishes scheduled to be painted under this Section. Use same material used for shop coat. Substrate shall be smooth, free from raised grain; putty sags, cracks, rust, grease, dirt, or other foreign matter or defect.
- H. Incompatible Shop Primers: Remove incompatible shop primers and reprime surfaces or provide barrier coats in compliance with finish paint manufacturer's instructions.

### 3.02 SURFACE PREPARATION

- A. Prepare surfaces to receive work of this Section in strict accordance with manufacturer's instructions applicable to each material, condition, and finish.
- B. Field-Welded Metal: After installation, field-welding, and grinding, and immediately before painting, remove rust, loose mill scale, dirt, weld flux, weld spatter, weld smoke stains, burnt primer, and other foreign material with wire brushes and/or steel scrapers. Power tool clean in accordance with SSPC SP 3. Remove grease and oil by use of solvent recommended by paint manufacturer. Sand exposed surfaces, and between coats, as required to produce smooth, even finishes.
  - 1. Sand smooth and spot prime welded areas, and areas where prime coat has been damaged or abraded, using rust inhibitive primer scheduled in this Section.
- C. Other Ferrous Metal: Remove rust, mill scale, and foreign materials. Wire brush or sand damaged or rusted area to bright metal. Remove grease or dirt with solvents recommended by paint manufacturer just prior to applying paint.
  - 1. Spot prime all areas where shop coat has been damaged or abraded, using same type paint as used for shop coat.
- D. Field-Welded Galvanized Metal: After installation, field-welding, and grinding, and immediately before painting, remove rust, loose mill scale, dirt, weld flux, weld spatter, weld smoke stains, and other foreign material with wire brushes and/or steel scrapers. Power tool clean in accordance with SSPC SP 3. Remove grease and oil with solvents recommended by paint manufacturer. Sand exposed surfaces, and between coats, as required to produce smooth, even finishes.
  - 1. Sand smooth welded areas and areas where galvanized coating has been damaged or abraded. Spot prime using zinc primer scheduled in this Section.
- E. Other Galvanized Metal: Prior to installation, remove corrosion and foreign materials by sanding or other appropriate method. Remove grease or dirt with solvent recommended by paint manufacturer just prior to applying primer.
- F. Other Non-Ferrous Metal: Prepare shop primed non-ferrous metals similarly to ferrous metals, specified above.

1. Prepare unprimed non-ferrous metals by thoroughly cleaning of oil, grease, and temporary protective coatings using solvent recommended by primer manufacturer. Provide additional pretreatment recommended by primer manufacturer to assure permanent adhesion of paint coats.

- G. Other Materials: Prepare other materials in strict accordance with recommendations of manufacturers of materials to be finished, and primers and finishes to be applied.
- H. Materials Preparation: Mix and prepare paint materials in accordance with manufacturer's printed instructions. Use only thinners approved by paint manufacturer, and only within recommended limits.

### 3.03 APPLICATION

- A. Painting Schedule in this Section lists minimum number of coats required. If specified minimum number of coats does not completely cover or hide base materials, provide additional coats required for coverage and uniform finish appearance, without additional cost to Owner.
- B. Apply paint in strict accordance with manufacturer's instructions. Use applicators and techniques best suited for substrates and types of materials being applied. No material shall be thinned in any way except as directed by manufacturer.
1. Workmanship shall be of the highest quality. Only skilled workmen shall be employed. All materials shall be applied under adequate illumination, evenly spread and smoothly flowed on without runs or sags. All work not conforming to the specifications shall be cleaned off and repainted at the expense of the Painting Contractor.
  2. Do not apply initial coating until moisture content of surface is within limitations recommended by manufacturer and surface is prepared in conformance with specifications and manufacturers recommendations.
  3. All materials shall be applied in accordance with the manufacturer's directions as printed on container and any thinning required shall be done in the manner and exclusively with the type of reducer recommended.
  4. No painter's finish shall be applied until the preceding coat is thoroughly dry and in no case less than six (6) days for exterior work and two (2) days for interior work, unless manufacturer of the paint material in question specifically directs otherwise. Exterior painting shall not be undertaken at temperatures below 50 degrees F. or immediately following rain, frost, or if dew is on the surface, sand and dust between each coat to remove defects.
  5. Finishing materials shall be free from skins, lumps or any foreign matter when used and shall be kept well stirred while being applied. Each coat shall be evenly brushed out.
- C. Apply paints and coatings at coverage rates and dry film thicknesses scheduled at the end of this Section. Each coat applied must be inspected and approved by Architect prior to application of succeeding coat, otherwise no credit for the coat applied will be given and work in question shall be recoated without additional expense to Owner. Notify Architect when each coat is ready for inspection.
- D. Additional Coats: Provide additional coats necessary to eliminate show through and bleed through conditions.
- E. Drying Time: Allow manufacturer's recommended drying time between successive coats. However, allow each coat to thoroughly dry prior to application of subsequent coat.
- F. Sanding: Lightly sand finishes between coats using #00 sandpaper.
- G. Tinting: Tint prime coat on gypsum wallboard and plaster to approximate color of final shade.
- H. Doors and Panels: Paint all doors, panels, access panels, etc., in the "open" position. Paint all edges, tops, bottoms, and both faces. Paint back face of access panels and removable or hinged covers to match adjacent exposed surfaces.



- I. Permanently Fixed Equipment: Paint surfaces behind permanently fixed equipment with prime coat only.
- J. Finished work shall be free from runs, sags, hairs, defective brushing, and clogging of lines and angles. Flaws visible in the completed work shall be removed and the area satisfactorily repaired.
- K. Mechanical and Electrical Work: Painting of mechanical and electrical items is limited to items exposed to view in the mechanical rooms and in occupied areas.
  - 1. Electrical items to be painted include but are not limited to:
    - a. Conduit and fittings.
- L. Completed Work: Provide finishes that match approved samples and mock-ups for color, texture, and coverage. Remove, refinish, or repaint work not in compliance with specified requirements.

### 3.04 COMPLETION

- A. Cleaning: At completion of work of this Section, remove paint and varnish spots, and oil, grease, and other stains caused by this work from exposed surfaces. Leave finishes in a satisfactory condition.
- B. At completion of work of this Section, remove masking materials and other debris. Reinstall or replace fixtures, plates, etc., removed to facilitate application of paint.
- C. Retouching: Touch-up and repair applied finishes which, for any reason have been damaged during construction work. All finished work applied under this Section shall have finished surfaces as approved by finish material manufacturer.
- D. Final Inspection: Protect painted surfaces against damage until date of Substantial Completion. Architect will conduct final inspection of painting work. Areas that do not comply with requirements of these Specifications shall be repainted or retouched to satisfaction of Architect at no additional cost to Owner.
- E. Paint Schedule: Prepare Schedule which includes a schedule identifying paint manufacturer, paint type, paint color, and gloss for each painted surface in each room. Said Schedule shall be sufficiently detailed to permit the Owner to use this Schedule for future maintenance, repainting, and reordering of paints and coatings.

### 3.05 SURFACES NOT TO BE FINISHED

- A. Finishes for the following items are either included under other appropriate Sections or require no painting, except as otherwise specifically scheduled with subsequent Exterior and Interior Schedules.
  - 1. Chrome or nickel plating, stainless steel, bronze, brass, and aluminum other than mill finished, unless otherwise specified.
  - 2. Factory finished mechanical and electrical equipment, pumps, and machinery, which occur in mechanical or equipment rooms or areas.
  - 3. Galvanized ducts, pipes, conduits, etc., occurring within mechanical areas or spaces. Also all such items fully concealed from view in the finished work (except items located above open cell ceilings in corridors).
  - 4. Factory finished materials, specialties, and accessories unless otherwise specified.
  - 5. Ceramic and clay products, glass, plastic, and other surfaces with "integral" finishes, except as otherwise scheduled hereinbelow.

3.06      PAINT SCHEDULE

- A.      Number of coats scheduled is minimum. Refer to Paragraph 3.02 for surface preparation and Paragraph 3.03A., hereinbefore.
- B.      Important Note: Notwithstanding anything in the following schedule to the contrary, painting and finishing shall conform to the applicable laws and building code regarding fire hazard classifications of finish materials.
- C.      Exterior:
  - 1.      Exterior Galvanized Steel for Acrylic Polyurethane Finish (exterior insulated steel doors):
    - a.      One Coat: Epoxy Primer in shop, under other Section.
    - b.      After Installation:
      - 1).      Galvanizing Repair at Field Welds: Tnemec No. 90-97 Tneme-Zinc Primer (dry film thickness 3.0 mils).
      - 2).      Intermediate Coat: Tnemec Series 27 Typoxy (dry film thickness 3.0 to 4.0 mils).
      - 3).      One Coat: Tnemec No. 73 Endura-Shield III (dry film thickness 2.0 to 3.0 mils).
  - 2.      Pre-primed Exterior Galvanized Steel Door and Frame (Alkyd Primer, Alkyd Finish):
    - a.      Field-Applied Undercoat:
      - 1).      One Coat: Benjamin Moore IronClad Alkyd Low Lustre Enamel #163 (1.3 mil DFT).
    - b.      Field-Applied Finish:
      - 1).      Two Coats: Benjamin Moore Impervo Semi-Gloss Enamel (1.7 mil DFT per coat).
  - 3.      Existing Exterior Steel Doors to Be Relocated (Alkyd Primer, Alkyd Finish):
    - a.      Touch-up:
      - 1).      Benjamin Moore IronClad Alkyd Low Lustre Enamel #163 (1.3 mil DFT).
    - b.      Field-Applied Finish:
      - 1).      Two Coats: Benjamin Moore Impervo Semi-Gloss Enamel (1.7 mil DFT per coat).
- D.      Interior:
  - 1.      Interior Metal Doors and Frames (Factory-Primed New Doors and Frames) including all new work, renovated spaces, and remaining portions of door assemblies:
    - a.      One Coat: Shop-applied primer by door and door frame manufacturer.
    - b.      Two Coats: Benjamin Moore Pristine Eco Spec Interior Latex Semi-Gloss 224, (1.5 mils DFT per coat).
  - 2.      Existing Interior Metal Frames (at Openings where New Doors are Installed)
    - a.      Sand Existing Frames to Prepare for New Coating (SSPC SP 3).
    - b.      Clean with Benjamin Moore KP83 Oil & Grease Emulsifier prior to primer.

- c. Primer (Field-Applied):
  - 1). One Coat: Benjamin Moore Fresh Start Rust Inhibitive Primer K163 (1.4 mils DFT) or one coat Benjamin Moore SuperSpec HP Acrylic Metal Primer KP04 (1.7 mils DFT).
- d. Field-Applied Finish:
  - 1). Two Coats: Benjamin Moore Impervo Semi-Gloss Enamel (1.7 mil DFT per coat).
- 3. Interior Metals not Specified to Receive other Coating Systems:
  - a. One Coat: Benjamin Moore Fresh Start Rust Inhibitive Primer K163 (1.4 mils DFT) or one coat Benjamin Moore SuperSpec HP Acrylic Metal Primer KP04 (1.7 mils DFT).  
  
Note: One prime coat only is required at interior metal work, except touch-up of areas which have become rusted or damaged prior to finish painting.
  - b. Two Coats      Pristine Eco Spec Interior Latex Semi-Gloss 224 (1.5 mils DFT per coat)
- 4. Electrical Work (Paint all exposed items throughout the project except factory finished items with factory-applied baked enamel finishes which occur in mechanical rooms or areas, and excepting chrome or nickel plating, stainless steel, and aluminum other than mill finished:
  - a. Same as specified for other interior metals, hereinabove.

END OF SECTION

SECTION 16101

ELECTRICAL WORK

(Filed Sub-bid Required)

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. Time, Manner and Requirements for Submitting Sub-Bids:
1. Sub-bids for work under this Section shall be for the complete Work of this Section and shall comply with the requirements of M.G.L., c. 149, §44F. and shall be filed in a sealed envelope with the MILLBURY PUBLIC SCHOOLS (AWARDING AUTHORITY) at a time and place as stipulated in the "INVITATION FOR BIDS".

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

Name of  
Sub-Bidder:

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Project: MILLBURY SCHOOL DOOR REPLACEMENT & SECURITY UPGRADE

Millbury Jr./Sr. High School  
12 Martin Street  
Millbury, Massachusetts 01527

Elmwood Street Elementary School  
40 Elmwood Street  
Millbury, Massachusetts 01527

Sub-Bid for: Section 16101, ELECTRICAL WORK

2. Each sub-bid submitted for work under this Section shall be on forms furnished by the AWARDING AUTHORITY as required by Section 44F of Chapter 149 of the General Laws, as amended. Sub-bid forms are included in this Project Manual or may be obtained at the office of the Architect.
3. Sub-bids filed with the AWARDING AUTHORITY shall be accompanied by BID BOND or CASH or CERTIFIED CHECK or TREASURER'S CHECK or CASHIER'S CHECK issued by a responsible bank or trust company payable to MILLBURY PUBLIC SCHOOLS in the amount of five percent of the sub-bid. A sub-bid accompanied by any other form of bid deposit than those specified will be rejected.

1.02 SUB-BID REQUIREMENTS

- A. Each Sub Bidder shall list in Paragraph E of the "Sub Bid Form" the name and bid price of each person, firm or corporation performing each class of work or part thereof for which the Section of the Specifications for the Sub-Trade requires such listing, provided that, in the absence of as contrary provision in the Specifications, any Sub Bidder may, without listing any bid price, list his own name in said Paragraph E for each such class of work or part thereof and perform that work with persons on his own payroll, if such Sub Bidder, after Sub Bid openings, shows to the satisfaction of the Awarding Authority, that he does customarily perform such class of work or the part thereof with persons on his own payroll and is qualified to do so. This Section of the Specifications requires that the following class(es) of work shall be listed in Paragraph E under the conditions herein.

CLASS OF WORK

REFERENCE PARAGRAPHS

None Required Under This Section

1.03 DESCRIPTION OF WORK

- A. Work shall be inclusive but not limited to providing a new branch circuit feed from the existing emergency panels to support the new door access control system equipment – location of the equipment to be field determined. Coordination with the door access control installer to determine the means and methods of furnishing the necessary raceway systems to support the new system components.
1. Labor, supervision, materials, tools, scaffolding, equipment, supplies, transportation and services for a complete and operational electrical system as specified shall be provided.
  2. Materials and equipment shall be installed in accordance with standards of the National Electrical Code, local codes, safety codes and ordinances.
- B. Alternates: Alternates #1, #2, #3, #4, #5, and #6; Refer to Section 01030, ALTERNATES and the Drawings.
- C. Items to Be Installed Only: Not Applicable
- D. Items To Be Furnished Only:
- E. Reference To Drawings: Work specified in ELECTRICAL WORK is subject to provisions of Section 44A to 44L inclusive, of Chapter 149 of General Laws of the Commonwealth of Massachusetts, as amended, and are indicated on the following Contract Drawings:
1. Drawings T-1.0 and T-1.1, Drawings A-0.1 through A-0.5, Drawings A-1.1 through A1.7, Drawings A2.1 through A2.5, and Drawing E-1.1.
  2. This Subcontractor shall carefully inspect all Drawings, not just those pertaining particularly to his sub-trade unless specifically called for otherwise, regardless of where among the Drawings it appears.
- F. Related Work:
1. Examine all other sections of the Specifications and all drawings for the relationship of the work under this Section and the work of other trades. Cooperate with all trades and coordinate all work under this section therewith.
  2. The following related items are not included in this Section and will be performed under the designated Sections:
    - a. Major cutting and patching.
    - b. Painting of exposed electrical conduit and boxes where required: See Section 09901, PAINTING.

- c. Firestopping of all penetrations where necessary in rated walls and ceilings: The Electrical Contractor shall be responsible for all firestopping of the interior raceways installed through walls and floors.

1.04 EXAMINATION OF SITE

- A. Before submitting a Bid, this Contractor must visit the job site to determine the conditions under which the work is to be done.

1.05 DRAWINGS AND SPECIFICATIONS

- A. Drawings and Specifications are complementary to each other. Any labor and material which is called for by either, whether or not by both, or which is necessary for the successful operation of all systems, shall be furnished and installed. Discrepancies should be brought immediately to the attention of the Architect.
- B. Plans and Specifications for this project should be examined to determine the scope and character of the work, the building design and function, and the required coordination with the General Contractor and other Trades before and during construction.
- C. Any questions regarding the plans and specifications shall be addressed in writing to the Architect five (5) days before Bids close; otherwise, after the closing of the Bids, the Architect's interpretation of the meaning and intent of the plans and specifications shall be final.
- D. Shop drawings and submissions of materials shall be made in an electronic PDF format within fifteen (15) days after the signing of the Contract.

1.06 INSURANCE

- A. Insurance is to conform to the provisions and requirements as set forth in the CONDITIONS OF THE CONTRACT and Division 1.

1.07 CHANGES AND REVISIONS

- A. Costs for changes and/or revisions shall be submitted to the General Contractor with material and labor breakdown of charges and credits clearly itemized.
- B. Work shall not be executed until approval has been received in writing from the Architect.

1.08 WORKMANSHIP

- A. Materials shall be new and shall conform to the standards of UL, Inc., in every case where such a standard has been established for the particular type of material in question. Work shall be executed in a workmanlike manner and a competent Foreman shall be provided for the entire project.
- B. After wires are pulled in and fixtures and equipment are installed, this Contractor shall make tests for performance, grounds, etc., and shall immediately remedy any defects. Equipment for tests shall be provided by this Contractor.
- C. Work under this Contract must be so performed that the progress of the entire project, including work of all Trades, shall not cause delays or interference. Materials and apparatus shall be installed as fast as the condition of the building will permit.
- D. It will be the responsibility of the Electrical Foreman to instruct the Owner in the function, operation and maintenance of electrical systems and equipment. This is to be done upon completion of the installation, before leaving the job site and to the satisfaction of the Owner, Engineer, and Architect.

1.09      MANUFACTURERS' NAMES AND TRADE NAMES

- A.      Throughout the specification types of materials may be specified by manufacturer's name and catalogue number in order to establish standards of performance and quality, and not to limit competition.

1.10      MATERIAL STORAGE AND OFFICE SPACE

- A.      This Contractor shall maintain at his own expense, where directed on the premises, neat covered storage for material and equipment, and office space where drawings and specifications shall be kept for records.
- B.      Equipment or material damaged during the construction period shall be replaced at this Contractor's expense.

1.11      GUARANTEE

- A.      Materials and labor incorporated in the work are to be guaranteed against defects for a period of one (1) year from date of substantial completion. This Contractor shall correct such defects that occur within the guarantee period and to the satisfaction of the Architect without cost to the Owner, within a twenty-four (24) hour period.
- B.      This Contractor shall not be responsible for failures through normal usage, nor for those caused by neglect or abuse on the part of the Owner or his employees.

1.12      CUTTING AND PATCHING

- A.      This Contractor as part of his work, and without extra charge, shall do fitting and minor cutting required for conduit one (1) inch and under. Cutting over one (1) inch and patching will be by the General Contractor. Costs for openings required due to lack of coordination shall be the responsibility of this Contractor.

1.13      OPERATING INSTRUCTIONS

- A.      This Contractor shall furnish electronic PDF copies of the Operating and Maintenance Manuals outlining in detail the operational features of the following systems:
  - 1.      Metal raceway and PVC system.
  - 2.      Cable.

1.14      PERMITS

- A.      This Contractor shall obtain and pay for permits for the electrical systems on this Project.

1.15      RECORD DRAWINGS

- A.      Refer to Section 01700, CONTRACT CLOSEOUT section which describes the requirements for record drawing submissions under "AS-BUILT DRAWINGS/RECORD KEEPING".

1.16      DEFINITIONS

- A.      The terms "This Contractor", "Electrical Contractor", "Electrical Subcontractor", or "This Section" all refer to the work of this Section 16101, ELECTRICAL WORK.

1.17      PRODUCT DELIVERY, STORAGE, AND HANDLING

- A.      The General Contractor shall provide and pay for all dumpster services during the entire construction period. Suppliers and Sub-Contractors to bring all rubbish and debris to the dumpster location daily. No costs are to be assessed to the suppliers or Sub-Contractors by the General Contractor for this service.
- B.      The General Contractor, Sub-Contractors and suppliers, individually, shall furnish their own staging, scaffolding, and hoisting equipment to get workers, material and equipment from the point of delivery at the project site to the point of use or installation within the building and project site.

1.18      WORK CONDITIONS/SEQUENCE

- A.      If Sub-Contractors find that conditions are not appropriate for them to begin the work of their trade or if they are directed to perform their work out of sequence by the General Contractor, or if the General Contractor directs Sub-Contractors to start and continue regardless of job conditions, the Sub-Contractor shall notify the Architect in writing by certified mail immediately.

PART 2 - PRODUCTS

2.01      RACEWAYS AND FITTINGS

- A.      Minimum size of conduit used shall be 3/4" with no more than 9-#12 conductors. All circuits shall have separate neutrals and grounds.
- B.      Electrical Metallic Tubing (EMT) shall be mild steel, electrically welded, galvanized, Midland-Ross, Wheatland or Republic. Furnish a spare pull string within each conduit raceway.
- C.      Conduit shall be kept at least six (6) inches away from adjacent copper piping or other copper work on the project.
- D.      During construction, ends of conduit shall be kept tightly plugged to exclude plaster, dirt, dust, moisture, and debris.

2.02      FIREPROOFING AND CONDUIT SEAL

- A.      The Electrical Contractor is responsible for all fireproofing of raceways through floors and walls.
- B.      The material to be used for firestopping shall be 3M moldable fire rated putty or 3M #CP25WB caulk to firestop penetrations in fire rated areas of walls and floors.

2.03      WIRING SYSTEM

- A.      Wiring shall be installed concealed in the construction.
- B.      Joints in wiring shall be made with approved type solderless connectors of the self-insulating type with an insulation equal to that of the conductors being joined. They shall be Minnesota Mining & Manufacturing Co., Type "Y", "R" or "B" Scotchlok, T&B Twist-on-Piggy or TUB one-piece, pressure type, self-insulating wire joint.
- C.      All branch circuits shall have separate grounds and neutrals.

2.04      WIRE

- A.      Unless otherwise specified, conductors installed in conduit shall be Type THW or THHN, 600V, 90 degree C. – Rome Cable. Conductors shall be copper.



- B. Covering of wires and cables designed to meet the above specifications shall have distinctive markings as required by the latest standards of UL, Inc., making them readily identifiable in the field.

2.05 GROUNDING

- A. The entire system shall be grounded in accordance with the National Board of Fire Underwriters', State and local requirements.
- B. Framework of control centers, motor apparatus, panels, heating equipment, portable equipment, etc., shall be grounded to a ground loop or buss to receive a building ground conductor.

2.06 OUTLET BOXES

- A. Outlet boxes shall be Steel City, Appleton, or Raco, galvanized of a type best adaptable to their respective use and in general four (4) square or octagon. Boxes in plaster areas shall be equipped with plaster rings or trim. Studs of suitable size for proper support shall be provided in boxes from which fixtures are to be hung.
- B. Boxes installed in tile, block or similar finished walls shall be solid flush type, square cornered, without ears, 1-2-3 and 4-gang as required - Raco, Steel City or Appleton.
- C. Outlet boxes shall be provided with only the holes necessary to accommodate conduit connected. Boxes shall be furnished with lugs, ears, covers and/or outlet devices for attachment.
- D. Plastic boxes are NOT acceptable.

2.07 SYSTEM OF LIGHT AND POWER

- A. Secondary distribution system is 120/208V, three phase, four wire, 60 HZ AC.

PART 3 - EXECUTION

3.01 INSPECTION AND COORDINATION

- A. This Contractor shall inspect surfaces and areas that will receive his material and the job conditions as they exist and report any conditions that may adversely affect his work. Notify Architect or General Contractor of unsuitable conditions.
- B. Coordinate work with construction schedule and job progress.
- C. This Contractor shall confer with the General Contractor and other Trades to coordinate his work and to properly locate systems to avoid conflict and interference.
- D. Any interference with the work of other Trades or with architectural or structural details shall be brought to the attention of the Architect for decision before installation. Contractor's failure to so coordinate his work will not relieve him of the responsibility to correct work to suit building conditions.

3.02 INSTALLATION

- A. Installation shall be by skilled workmen using proper equipment. Commencement of work shall be deemed as acceptance of existing conditions by installer.
- B. Entire application shall be in strict accordance with manufacturer's recommendations and the standards of the National Electrical Code, local codes and ordinances, OSHA safety codes and regulations.

- C. After wires are pulled in and all fixtures are installed, this Contractor shall make tests for performance, grounds, etc., and shall immediately remedy defects. Equipment for tests shall be borne by this Contractor.
- D. Work under this Contract must be so performed that the progress of the entire project, including work of all Trades shall not cause delays or interference. Material and apparatus shall be installed as fast as condition of the building will permit.

3.03 RACEWAYS AND FITTINGS

- A. Conduit and wiring shall be installed concealed in the construction where possible. Conduit shall be installed in a neat, workmanlike manner and run parallel to building walls. Conduit size shall be minimum 3/4 in.
- B. Ends of conduit entering boxes shall be equipped with galvanized locknuts and bushings. Cut ends of conduit shall be reamed free of burrs and sharp edges.
- C. Electrical metallic tubing couplings and terminations in outlet boxes, junction boxes, panelboard cabinets, etc., shall be secured thereto for grounding by means of raintight and concrete-tight fittings of the interlocking compression ring or stainless steel, multiple joint locking type. Set screws or indentations will be acceptable as a method of attachment of fittings to conduit or EMT.

3.04 INSTRUCTIONS TO OWNER

- A. It shall be the responsibility of the Electrical Foreman to instruct the Owner in the function, operation and maintenance of electrical systems and equipment.

3.05 CLEANUP

- A. Stains and/or damage to the finish of the building caused by faulty workmanship and/or improper handling of material in regard to installation shall be cleaned or removed and replaced at no cost to the Owner.
- B. Panels and like shall be cleaned and left in a neat manner and where required shall be painted if any finish material has been removed.

3.06 FIRESTOPPING

- A. The Electrical Contractor shall be responsible to fire stop all the raceways and the interior and exterior of all sleeves through which wires penetrate walls, floors or any other penetrations requiring firestopping material under this Section.

END OF SECTION