

# PROJECT MANUAL

MGL c.30 §39M Over \$50K



## EOHLC

EXECUTIVE OFFICE OF HOUSING and LIVABLE COMMUNITIES

## Modernization of State Aided Public Housing

### Creative Placemaking

STATE AIDED DEVELOPMENT:

**CJ Durkin Apartments (667-5)**

50 Day Street, Fitchburg, MA 01420

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#### HOUSING AUTHORITY

Fitchburg Housing Authority  
50 Day Street  
Fitchburg, MA 01420

#### PRIME DESIGNER

Allen & Major Associates, Inc.  
100 Commerce Way, Suite 5  
Woburn, MA 01801  
Phone: 781-305-9420

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#### BOARD MEMBERS

Linda Byrne, Chair  
Adam Goodwin, Vice-Chair  
David Basilio, Treasurer  
David Rousseau, Member - Tenant Representative  
Thomas Hughes, Member - State Appointee  
Vacant, Assistant Treasurer  
Douglas M. Bushman, Esq., Executive Director, CPO & CEO

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**DATE:** 07 February 2024

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Section 00 01 05  
LIST OF CONSULTANTS

**Creative Placemaking  
Project No. 097156**

**AWARDING AUTHORITY**

Fitchburg Housing Authority  
50 Day Street  
Fitchburg, MA 01420

**PRIME DESIGNER**

Allen & Major Associates, Inc.  
100 Commerce Way, Suite 5  
Woburn, MA 01801  
Phone: 781-305-9420

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**PROJECT:**

Fitchburg Housing Authority  
 Creative Placemaking  
 Project No. 097156

**Table of Contents**

**Specification:**

**DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS**

00 01 00	Project Manual .....	1
00 01 05	List of Consultants .....	1
00 01 08	Table of Contents .....	2
00 11 13	Advertisement to Bid .....	2
00 21 13	Instructions to Bidders .....	6
00 41 00	Form for General Bid .....	2
00 41 01	Bid Deposit 5% - General Contractor .....	1
00 41 05	Bidder's Similar Projects Reference Form .....	3
00 52 00	Awarding Authority Contractor Agreement .....	3
00 52 06	Form of Corporate Vote .....	1
00 61 01	Payment Bond Contractor .....	2
00 72 00	General Conditions Contract Construction .....	39
00 73 36	Equal Employment Opportunity Requirements .....	5
00 73 36.01	Form of Contractor's Equal Employment Certification .....	1
00 73 36.03	EEO Contractor's Weekly Manpower Report .....	1
00 73 43	Wage Rate Requirements .....	1
	Payroll Report Form .....	1
	Wage Rates .....	38

**DIVISION 01 - GENERAL REQUIREMENTS**

01 11 00	Summary of Work .....	5
01 23 00	Alternates .....	1
01 26 00	Contract Modification Procedures .....	4
01 26 00.01	Change Order .....	1
01 26 00.02	Construction Change Directive .....	1
01 29 00	Payment Procedures .....	3
01 29 00.01	Application for Payment .....	1
01 29 00.02	Continuation Sheet .....	1
01 33 00	Submittal Procedures .....	5
01 33 01	Substitution Request Form .....	3
01 50 00	Temporary Facilities .....	6
01 50 10	Temporary Protection and Controls .....	6
01 50 20	Cleaning .....	3
01 73 29	Cutting and Patching .....	7
01 74 19	Construction and Demolition Waste Management .....	3
01 74 19.01	Pre-construction Waste Management Report Form for Mandatory Recycling .....	1
01 77 00	Project Closeout Procedures .....	6
01 77 00.01	Sample Certificate of Substantial Completion Form .....	1
01 77 00.02	Sample Certificate of Partial Release of Retainage Form .....	1
01 77 00.03	Sample Certificate of Final Completion Form .....	1

**DIVISION 02 - EXISTING CONDITIONS**

02 40 00	Demolition .....	8
----------	------------------	---

**DIVISION 03 - CONCRETE**

03 30 53	Miscellaneous Cast-In-Place Concrete .....	8
----------	--	---

**DIVISION 31 - EARTHWORK**

31 00 00	Earthwork .....	16
31 01 10	Site Preparation .....	4
31 10 00	Site Clearing .....	3
31 23 13	Excavation, Backfill & Compaction for Pavement .....	4
31 25 00	Slope Protection and Erosion Control .....	4

31 26 16.13	Excavation, Backfill & Compaction for Utilities.....	5
31 32 00	Soil Stabilization.....	5
<b><u>DIVISION 32 - EXTERIOR IMPROVEMENTS</u></b>		
32 12 16	Asphalt Paving.....	13
32 13 13	Concrete Paving.....	7
32 16 00	Curbs, Sidewalks, Islands, and Ramps.....	8
32 17 23	Pavement Markings.....	4
32 22 26	Asphalt Base Course.....	5
32 92 19	Seeding.....	5
<b><u>DIVISION 33 - UTILITIES</u></b>		
33 40 00	Storm Sewer System.....	8

**Drawings:**

**TITLE / REFERENCE**

	COVER
V-101	EXISTING CONDITIONS

**CIVIL**

C-101	DEMOLITION AND EROSION CONTROL PLAN
C-101A	DEMOLITION AND EROSION CONTROL PLAN
C-101B	DEMOLITION AND EROSION CONTROL PLAN
C-102	LAYOUT AND MATERIALS PLAN
C-102A	LAYOUT AND MATERIALS PLAN
C-103	GRADING & DRAINAGE PLAN
C-103A	GRADING & DRAINAGE PLAN
C-501	DETAILS
C-502	DETAILS
C-503	DETAILS
C-504	DETAILS
C-505	DETAILS
C-506	DETAILS

**LANDSCAPE**

L-101	LANDSCAPE PLAN
L-102	LANDSCAPE PLAN ENLARGEMENTS
L-501	LANDSCAPE NOTES & DETAILS

END OF TABLE OF CONTENTS

Section 00 11 13  
**ADVERTISEMENT TO BID**  
MGL c.30 §39M Over \$50K

The **FITCHBURG HOUSING AUTHORITY**, the Awarding Authority, invites sealed bids from Contractors for the Creative Placemaking at State Aided Development: CJ Durkin Apartments (667-5) in Fitchburg, Massachusetts, in accordance with the documents prepared by **ALLEN & MAJOR ASSOCIATES, INC.** .

The Project consists of but not limited to:

Site reconstruction and improvements in four (4) different areas of the property. Day Street improvements, Loading dock area improvements, Blossom Street improvements and an Alternate area within the Courtyard (only accessible by entering through the building). General project scope includes removal of existing pavement, concrete, brick, wood retaining walls. Large and smaller tree removal. Remove portions of wooden structures, pergola, and stairs. Light pole removal. Tree protection. Erosion control measures. Improvements scope includes pavement improvements, concrete sidewalk, stamped concrete (alternate), segmental block retaining walls, bollards, concrete pads, outdoor benches, tables, chairs, bike racks, raised planter boxes, new fencing, fence gates, handrails, concrete sidewalk, driveway apron, curbing, pavement markings, retractable awnings, flag pole, smoking shelter, area drain, trench drain, drainage pipe, crushed stone, loam, seed, mulch, new plantings and trees,

The work is estimated to cost **\$380,000.00**.

All bidding Requests for Information (RFIs) shall be submitted online by 02/22/2024 at 10:00AM EST for general bids.

Bids are subject to M.G.L. c.30§39M and to minimum wage rates as required by M.G.L. c.149 §§26 to 27H inclusive.

**THIS PROJECT IS BEING ELECTRONICALLY BID AND HARD COPY BIDS WILL NOT BE ACCEPTED.** Please review the instructions in the bid documents on how to register as an electronic bidder. All Bids shall be submitted online at [biddocs.com](https://biddocs.com) and received no later than the date and time specified.

General Bids will be received until **29 February 2024** on **11:00AM EST** and publicly opened online, forthwith.

General bids and sub-bids shall be accompanied by a bid deposit that is not less than five (5%) of the greatest possible bid amount (including all alternates) and made payable to the **FITCHBURG HOUSING AUTHORITY**. Note: A bid deposit is not required for Projects advertised under \$50,000.

Bid Forms and Contract Documents will be available for review at [biddocs.com](http://biddocs.com) (may be viewed and downloaded electronically at no cost).

PRE-BID CONFERENCE / SITE VISIT: Scheduled

Date and Time: 02/15/2024 at 2:00PM EST

Address: 50 Day Street, Fitchburg, MA 01420

Instructions: Meet at 50 Day Street main building door. First come, first serve street parking.

The hard copy Contract Documents may be seen at:

Nashoba Blue Inc.  
433 Main Street  
Hudson, MA 01749  
978-568-1167

END OF SECTION



Section 00 21 13  
INSTRUCTIONS TO BIDDERS  
MGL c.30 §39M Over \$50K

**THIS PROJECT IS BEING ELECTRONICALLY BID AND HARD COPY BIDS WILL NOT BE ACCEPTED. Please review the instructions in the bid documents on how to register as an electronic bidder. The bids are to be prepared and submitted at [biddocs.com](http://biddocs.com) .**

## ARTICLE 1 - BIDDER'S REPRESENTATION

- 1.1 Each General Bidder or Sub-bidder (hereinafter called the "**Bidder**") by making a bid or sub-bid (hereinafter called "**bid**") represents that:
1. The Bidder has read and understands the Contract Documents and the bid is made in accordance therewith.
  2. The Bidder has visited the site and is familiar with the local conditions under which the Work must be performed.
- 1.2 Failure to so examine the Contract Documents and site will not relieve any Bidder from any obligation under the bid as submitted.

## ARTICLE 2 – CONTRACTOR'S CERTIFICATIONS

- 2.1 **Massachusetts law requires all employees who work on Massachusetts public works construction sites shall have no less than 10 hours of OSHA-approved safety and health training. See Chapter 306 of the Acts of 2004.**
- .1 This law directs the Massachusetts Attorney General to restrain the award of construction contracts to any contractor who is in violation of this requirement and to restrain the performance of these contracts by non-complying contractors.
  - .2 The Contractor and all subcontractors on this project will be required to provide certification of compliance with this requirement in accordance with the provisions of Section 00 73 43 – Wage Rates Requirements of these Contract Documents. Non-compliance with this new Massachusetts Law will disqualify you from bidding on public contracts.
- 2.2 For all MGL c. 149 projects, the Contractor shall be completely responsible for compliance with EPA Lead Renovator Requirements including EPA regulation 40 CFR 745, if applicable.
- 2.3 **For MGL c. 149 contracts with an estimated construction cost over \$100,000 ONLY**, General bids shall be submitted with the following.
- .1 A Certificate of Eligibility on the appropriate form prescribed and issued by the Division of Capital Asset Management and Maintenance (DCAMM), showing that the Bidder is eligible to bid on projects of this size in the specified category of work (create a pdf file of the Certificate and browse & attach at

- [biddocs.com](http://biddocs.com)); and
- .2 A DCAMM Contractor Update Statement Form (create a pdf file of the Update Statement and browse & attach at [biddocs.com](http://biddocs.com)).
  - .3 The Contractor Update Statement is not a public record as defined in DCAMM regulation 810 CMR 8.06 and will not be open to public inspection.
- 2.4** It is the Bidder's responsibility to obtain the necessary forms from DCAMM and make application in sufficient time for evaluation of the application and issuance of a Certificate of Eligibility prior to bid.

### ARTICLE 3 - REQUESTS FOR INTERPRETATION

- 3.1** Bidders shall promptly notify the contact specified in the Advertisement via written request for information (RFI) of any ambiguity, inconsistency, or error which they may discover upon examination of the Contract Documents, the site, and local conditions.
- 3.2** Bidders requiring clarification or interpretation of the Contract Documents shall make a written request for information (RFI) as specified in the Advertisement. The Awarding Authority may answer such requests if received before the bid date and/or within the time specified in the Advertisement. The Awarding Authority has no obligation to respond to the written requests.
- 3.3** Interpretation, correction, or change in the Contract Documents will be made by written Addendum which will become part of the Contract Documents. Neither the Awarding Authority nor the Prime Designer will be held accountable for any oral interpretations, corrections, or changes.
- 3.4** Copies of addenda will be made available for inspection at the locations listed in the Advertisement where Contract Documents are on file or at [biddocs.com](http://biddocs.com). **Hard copies of the addenda will not be forwarded to the plan holders. The bidder is solely responsible for reviewing all addenda posted on the project website.**

### ARTICLE 4 - PREPARATION AND SUBMISSION OF BIDS

- 4.1 Forms and Bid Preparation**  
Bids shall be submitted electronically on the "**Form for General Bid**" at [www.biddocs.com](http://www.biddocs.com), as appropriate and available at no cost.  
The forms enclosed in the Project Manual shall not be extracted or used.
- .1 All bidders must create a User Profile account at [www.biddocs.com](http://www.biddocs.com), at no cost, to complete and submit a bid. The Awarding Authority, the Prime Designer or BidDocs ONLINE Inc. will not be held accountable if the bidder fails to create a User Profile in a timely manner.

- .2 All entries on the bid form shall be made online. Any documents that are attached to the bid must be in a pdf format.
- .3 Sums shall be expressed in both words and figures in the space indicated on the bid form. The electronic bid forms automatically match the “word” amount to the numeric “figure” amount entered.

#### 4.2 Bid Deposits shall be:

- .1 at least five percent (5%) of the greatest possible bid amount, considering all alternates (except for projects bid under MGL c. 149 or MGL c. 3039M under \$50,000);
- .2 made payable to the **Awarding Authority**.
- .3 conditioned upon faithful performance by the principal of the agreements contained in the bid, and
- .4 in the form of:
  - a. cash,
  - b. certified check, treasurer’s or cashier’s check issued by a responsible bank or trust company, or
  - c. bid bond issued by a surety company licensed to do business in the Commonwealth of Massachusetts.

**Note:** Both the “bid bond” and “check” bid deposits are to be scanned and uploaded to the system as a pdf file. **IMPORTANT NOTICE:** If the bidder elects to make a bid deposit in the form of “cash” or “check”, the Bidder must have the cash or check physically delivered to the Awarding Authority prior to the date and time of the bid opening.

- .5 retained until the execution and delivery of the Awarding Authority / Contractor Agreement if they represent the bid deposit of one of the three (3) lowest responsible and eligible General Bidders or one of the three (3) lowest Sub-bidders in a filed sub-bid trade, or a sub-bidder listed by one of the three (3) lowest General Bidders.

#### 4.3 Electronic Submission of General Bids

General Bids, including the bid deposit (if applicable), and required miscellaneous forms noted in the bid documents shall be submitted electronically online at [biddocs.com](http://biddocs.com) . No hard copy bids will be accepted.

The Bidder will receive an email and/or system notification confirming submission of the bid. Click on the email link to review and print the submitted bid documents. Keep the email as a **receipt** that the bid was submitted. **Note:** The Bidder may modify the bid at any time prior to the bid date and time advertised. The Bidder will receive a new email each time the Bidder re-submits the bid.

- .1 Date and time for receipt of bids is set forth in the Advertisement.
- .2 Timely submission of a bid online shall be the full responsibility of the Bidder.

Note: The project countdown clock on the website is the official clock that will determine when the bids are due.

#### 4.4 Addenda

All modifications to the bid documents will be issued via an addendum. All registered plan holders will be electronically notified when addenda are issued. **Hard copies of the addenda will not be forwarded to the plan holders.** The Bidder is solely responsible for reviewing all addenda posted on the project website. The Bidder must acknowledge all addenda have been reviewed by selecting “yes” or “no” as part of the e-bidding process. If the Bidder selects “no”, the Bidder will automatically be directed to the Addenda icon on the project page.

### ARTICLE 5 - ALTERNATES

- 5.1 Each General Bidder shall acknowledge Alternates in Section C on the Form for General Bid by entering the dollar amount of addition or subtraction necessitated by each Alternate.
- 5.2 In the event an Alternate does not involve a change in the amount of the base bid, the Bidder shall so indicate by entering **"0" (numeric figure)** in the “Add” space provided for that Alternate.
- 5.3 General Bidders shall enter on the Form for General Bid a single amount for each Alternate.
- 5.4 The low Bidder will be determined based on the sum of the base bid and the accepted alternates.
- 5.5 Alternates will be considered in numerical sequence as required by Chapter 149, Section 44G of the Massachusetts General Laws.

### ARTICLE 6 - WITHDRAWAL OF BIDS

#### 6.1 Before Opening of Bids

Any bid may be withdrawn (retracted) prior to the time designated for receipt of bids upon clicking the tab to “Retract Bid”. The Bidder and the Awarding Authority will receive an email confirming that the bidder retracted the bid. Withdrawn bids may be modified and resubmitted up to the time designated for the receipt of bids.

#### 6.2 After Opening of Bids

Bidders may withdraw a bid, without penalty, any time up to the time of Award as defined in paragraph 6.1, and upon demonstrating, to the satisfaction of the – Awarding Authority, that a bona fide clerical error was made during the preparation of the bid. Failure to conclusively demonstrate a bona fide clerical error may result

in forfeiture of the bid deposit.

- 6.3** In the event of a general bid withdrawal after opening of bids, the Awarding Authority shall consider the bid from the next lowest eligible and responsible bidder.

## **ARTICLE 7 - CONTRACT AWARD**

- 7.1** **Award** means both the determination and selection of the lowest, responsible, and eligible bidder, by the Awarding Authority.
- 7.2** The Awarding Authority will award the contract to the lowest responsible and eligible bidder within thirty (30) days, Saturdays, Sundays, and legal holidays excluded after the opening of bids in accordance with M.G.L. c.149 §44A.
- 7.3** The Contract will be awarded to the lowest responsible and eligible Bidder, except in the event of substitution as provided under M.G.L. c.149 §§44E and 44F, in which cases the procedure as required by said sections shall govern the award of the Contract.
- 7.4** The award of this Contract is subject to the approval of the Undersecretary of the Commonwealth of Massachusetts, Executive Office of Housing and Livable Communities (EOHLC) or its Designee. Contracts without EOHLC approval shall not be considered valid.
- 7.5** The Awarding Authority reserves the right to waive any informalities in or to reject any or all Bids if it is in the public interest to do so.
- 7.6** As used herein, the term "lowest responsible and eligible bidder" shall mean the General Bidder whose bid is the lowest of those Bidders demonstrably possessing the skill, ability, and integrity necessary for the faithful performance of the work, and who meets the requirements for Bidders set forth in M.G.L. c.149 §44A-J and is not debarred from bidding under M.G.L. c.149 §44C; and who shall certify that they are able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work.

## **ARTICLE 8 - FORMS REQUIRED FOR CONTRACT APPROVAL**

- 8.1** Upon Award, the General Bidder shall complete the following forms to ensure prompt contract validation. These forms will be provided to the selected General Bidder by the Awarding Authority.
- 8.2** **Awarding Authority / Contractor Agreement and Form of Corporate Vote.**

- 8.3 Form of Contractor's Equal Employment Certification** in accordance with Specification Section 00 73 36. (Form 00 73 36.01).
- 8.4 Form of Performance Bond and Form of Payment Bond** must be submitted by the General Contractor on the Awarding Authority's form, in accordance with the General Conditions. The dates on the bonds must coincide with the contract date, and a current Power-of-Attorney must be attached to each bond. The minimal performance and payment bonds are as follows.

BOND	MGL c. 149		MGL c. 3039M	
	\$25K to \$50K	\$50K to \$150K	\$25K to \$50K	Over \$50K
Performance	100%	100%	100%	100%
Payment	100%	100%	100%	100%

- 8.5 Insurance Certificates** for the General Contractor are required and must be submitted in accordance with the General Conditions. General Contractors must indicate special perils insurance or installation floater if stored materials are covered.
- 8.6 Company Certification of Compliance with EPA Regulation 40 CFR 745** must be submitted before Contract validation.
- 8.7 Statement of Management on Internal Accounting Controls and a Statement prepared by a CPA** expressing an opinion to the state of Management Controls, as required by M.G.L. c.30 §39R. This applies to the General Contractor only for contracts of \$100,000 or more.

**ARTICLE 9 - CONTRACT VALIDATION**

- 9.1** The Awarding Authority -Contractor Agreement shall not be valid until signed by the Undersecretary of the Executive Office of Housing and Livable Communities (EOHLC) or its Designee.
- 9.2** The Notice to Proceed for construction shall not be issued until the Awarding Authority/Contractor Agreement has been validated by the Undersecretary of the EOHLC or its Designee.
- 9.3** Incomplete or unacceptable submissions of forms required by paragraphs 8.2 – 8.7 will delay the validation of the Awarding Authority/Contractor Agreement by the EOHLC.

END OF SECTION

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Section 00 41 00  
FORM FOR GENERAL BID  
MGL c.30 §39M Over \$50K

**TO THE AWARDING AUTHORITY:** Fitchburg Housing Authority

**A.** The Undersigned proposes to furnish all labor and materials required for **Creative Placemaking [Project #097156]** at **CJ Durkin Apartments (667-5)** in Fitchburg, Massachusetts, in accordance with the accompanying plans and specifications prepared by **Allen & Major Associates, Inc.** for the contract price specified below, subject to additions and deductions according to the terms of the specifications.

**B.** This bid includes addenda numbered: \_\_\_\_\_

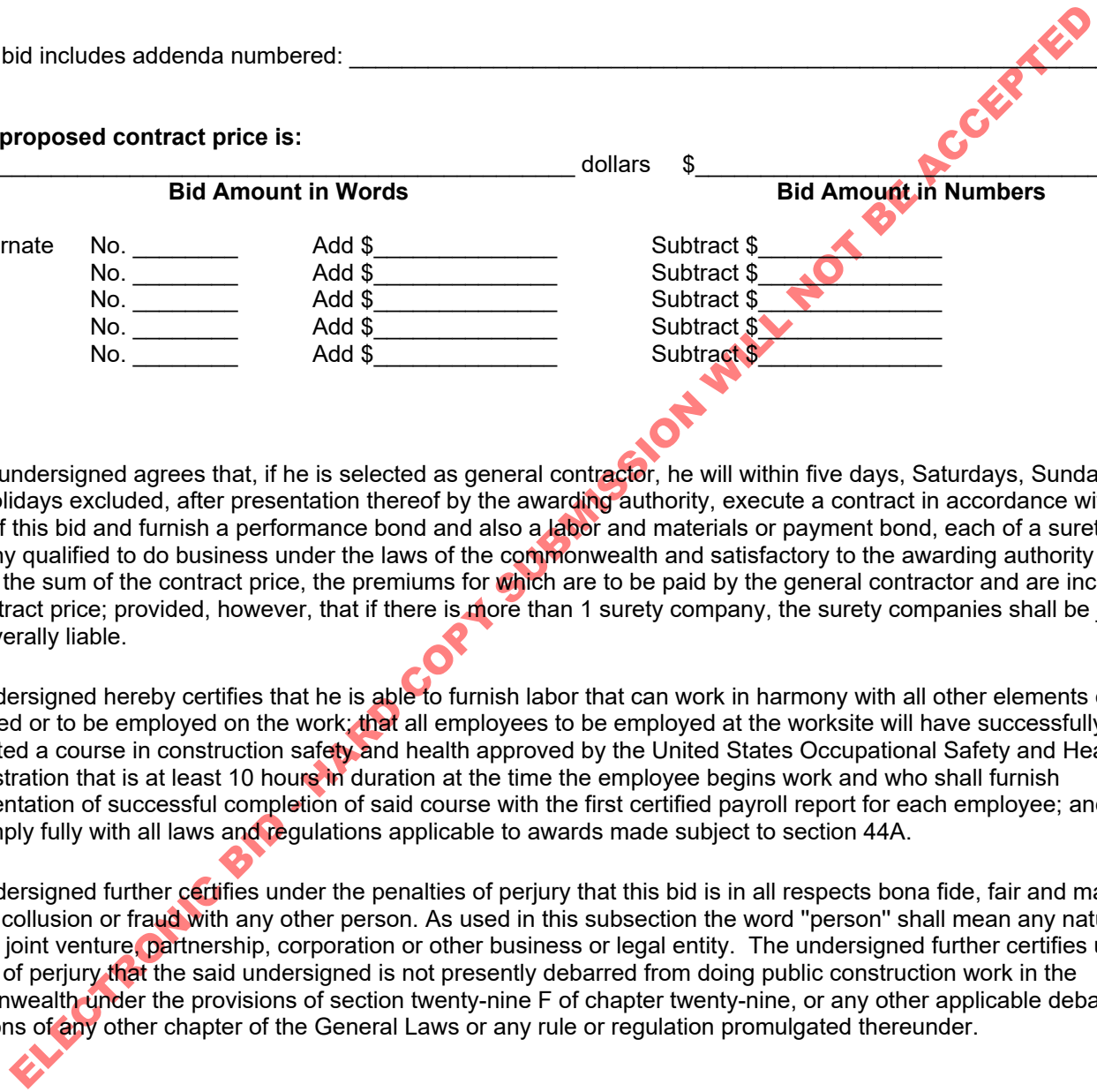
**C. The proposed contract price is:**

_____		dollars	\$	_____
<b>Bid Amount in Words</b>				<b>Bid Amount in Numbers</b>
For alternate	No. _____	Add \$	_____	Subtract \$ _____
	No. _____	Add \$	_____	Subtract \$ _____
	No. _____	Add \$	_____	Subtract \$ _____
	No. _____	Add \$	_____	Subtract \$ _____
	No. _____	Add \$	_____	Subtract \$ _____

**D.** 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; provided, however, that if there is more than 1 surety company, the surety companies shall be jointly and severally liable.

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

The undersigned further certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.



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\_\_\_\_\_  
**NAME OF BIDDER**

\_\_\_\_\_  
**SIGNATURE AND TITLE OF PERSON SIGNING BID**

\_\_\_\_\_  
**BUSINESS ADDRESS**  
\_\_\_\_\_

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

**ELECTRONIC BID - HARD COPY SUBMISSION WILL NOT BE ACCEPTED**



# BID BOND

**CONTRACTOR:**

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

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

**SURETY:**

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

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

**AWARDING AUTHORITY:**

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

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

**BOND AMOUNT:** \_\_\_\_\_

**PROJECT:** \_\_\_\_\_

The Contractor and Surety are bound to the Awarding Authority in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Awarding Authority accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Awarding Authority and Contractor, and the Contractor either (1) enters into a contract with the Awarding Authority in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise, acceptable to the Awarding Authority, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Awarding Authority may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Awarding Authority and Contractor to extend the time in which the Awarding Authority may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Awarding Authority and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory and not as a common law bond.

**IN THE WITNESS WHEREOF,**

the Principal and Surety signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

\_\_\_\_\_  
(Witness) \_\_\_\_\_ (Contractor as Principal) (Seal)

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

\_\_\_\_\_  
(Witness) \_\_\_\_\_ (Surety) (Seal)

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

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**SIMILAR PROJECTS - REFERENCE FORM**

The bidder must provide five (5) similar projects performed & completed within the past five (5) years.

Similar Project 1	
Project Address: _____	
Start Date: _____	End Date: _____
Current Cost: _____	Original Cost: _____
Cost Change Explanation: _____	
Project Description: _____ _____ _____	
Awarding Authority Reference Contact	Prime Designer Reference Contact
_____ _____ _____	_____ _____ _____
Project Manager Reference Contact	General Contractor Reference Contact
_____ _____ _____	_____ _____ _____

Similar Project 2	
Project Address: _____	
Start Date: _____	End Date: _____
Current Cost: _____	Original Cost: _____
Cost Change Explanation: _____	
Project Description: _____ _____ _____	
Awarding Authority Reference Contact	Prime Designer Reference Contact
_____ _____ _____	_____ _____ _____
Project Manager Reference Contact	General Contractor Reference Contact
_____ _____ _____	_____ _____ _____

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ELECTRONIC BID SUBMISSION WILL NOT BE ACCEPTED

**SIMILAR PROJECTS - REFERENCE FORM**

Similar Project 3	
Project Address: _____	
Start Date: _____	End Date: _____
Current Cost: _____	Original Cost: _____
Cost Change Explanation: _____	
Project Description: _____ _____ _____	
Awarding Authority Reference Contact	Prime Designer Reference Contact
_____	_____
_____	_____
_____	_____
Project Manager Reference Contact	General Contractor Reference Contact
_____	_____
_____	_____
_____	_____

Similar Project 4	
Project Address: _____	
Start Date: _____	End Date: _____
Current Cost: _____	Original Cost: _____
Cost Change Explanation: _____	
Project Description: _____ _____ _____	
Awarding Authority Reference Contact	Prime Designer Reference Contact
_____	_____
_____	_____
_____	_____
Project Manager Reference Contact	General Contractor Reference Contact
_____	_____
_____	_____
_____	_____

ELECTRONIC BID - HARD COPY SUBMISSION WILL NOT BE ACCEPTED

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**SIMILAR PROJECTS - REFERENCE FORM**

Similar Project 5	
Project Address: _____	
Start Date: _____	End Date: _____
Current Cost: _____	Original Cost: _____
Cost Change Explanation: _____	
Project Description: _____ _____ _____	
Awarding Authority Reference Contact	Prime Designer Reference Contact
_____ _____ _____	_____ _____ _____
Project Manager Reference Contact	General Contractor Reference Contact
_____ _____ _____	_____ _____ _____

**ELECTRONIC BID - HARD COPY SUBMISSION WILL NOT BE ACCEPTED**

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Section 00 52 00  
AWARDING AUTHORITY/CONTRACTOR AGREEMENT  
Commonwealth of Massachusetts  
Executive Office of Housing and Livable Communities  
MGL c.30 §39M Over \$50K

This agreement made the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ by and between the **FITCHBURG HOUSING AUTHORITY** Hereinafter called the "Awarding Authority", and \_\_\_\_\_ hereinafter called the "Contractor".

*Witnesseth*, that the Awarding Authority and the Contractor, for the consideration hereinunder named, agrees as follows:

**Article 1. Scope of Work:** The Contractor shall perform all Work required by the Contract Documents for **CREATIVE PLACEMAKING** Project No. 097156 referred to in the Contract Documents prepared by **ALLEN & MAJOR ASSOCIATES, INC.** as and referred to as the "Prime Designer".

**Article 2. Time of Completion:** The Contractor shall commence work under this Contract on the date specified in the written "Notice to Proceed" and shall bring the Work to Substantial Completion within \_\_\_ calendar days of said date. Damages for delays in the performance of the Work shall be in accordance with Article 8 of the General Conditions of the Contract and/or a minimum of \$500/day.

**Article 3. Contract Sum:** The Awarding Authority shall pay the Contractor, in current funds, for the performance of the Work, subject to additions and deductions by Change Order, of the Contract Sum of:

\_\_\_\_\_ Dollars \$ \_\_\_\_\_  
Contract Amount in Words Contract Amount in Dollars

**Article 4. The Contract Documents:** The following, together with this Agreement, form the Contract and all are as fully a part of the contract as if attached to this Agreement or repeated herein: The Advertisement, Bidding Documents, Contract Forms, General and Supplemental Conditions of the Contract, and Specifications as enumerated in the Table of Contents, the drawings as enumerated in the List of Drawings, Addenda, EOHLIC publication known as the Construction Handbook, and all Modifications issued after execution of the Contract. Terms used in this Agreement which are defined in the Conditions of the Contract shall have the meanings designated in those Conditions.

**Article 5. Alternates:** The following Alternates have been accepted and their costs are included in the Contract Sum stated in Article 3 of this Agreement: **Alternate No(s):**  
\_\_\_\_\_.

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**Article 6. REAP Certification:** Pursuant to M.G.L. c.62(c), sec.49(a), the individual signing this Contract on behalf of the Contractor, hereby certifies, under the penalties of perjury, that to the best of their knowledge and belief the Contractor has complied with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

**Article 7. Worker Documentation Certification:** In accordance with Executive Order 481 the undersigned further certifies under the penalties of perjury that the Contractor shall not knowingly use undocumented workers in connection with the performance of this contract; that pursuant to federal requirements, the Contractor shall verify the immigration status of all workers assigned to such contract without engaging in unlawful discrimination; and that it shall not knowingly or recklessly alter, falsify, or accept altered or falsified documents from any such worker(s). The Contractor understands and agrees that breach of any of these terms during the contract period may be regarded as a material breach, subjecting the Contractor to sanctions, including but not limited to monetary penalties, withholding of payments, contract suspension or termination.

**Article 8. Conflict of Interest:** The Contractor covenants, that (1) presently, there is no financial interest and shall not acquire any such interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement or which would violate M.G.L. c.268A, as amended; (2) in the performance of this Contract, no person having any such interest shall be employed by the Contractor or engaged as a subcontractor by the contractor; and (3) no partner or employee of the firm is related by blood or marriage to any Board Member or employee of the Awarding Authority.

**Article 9. Validation:** This Contract will not be valid until signed by the Undersecretary of the Massachusetts Executive Office of Housing and Livable Communities.

*In Witness Whereof, the Parties Hereto Have Caused This Instrument to be Executed Under Seal.*

1 Contractor	FITCHBURG HOUSING AUTHORITY
<p><sup>1</sup> If a Corporation, attach a notarized copy of the Corporate Vote authorizing signatory to sign Contract.</p>	

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**Executive Office of Housing and Livable Communities**

In accordance with MGL 121B and revisions thereto.

---

Undersecretary

---

Date

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Section 00 52 06  
FORM OF CORPORATE VOTE  
MGL c.30 §39M Over \$50K

I hereby certify that a meeting of the Board of Directors of the:

\_\_\_\_\_ Name of Corporation  
duly called and held at \_\_\_\_\_ on the \_\_\_\_ day of \_\_\_\_\_  
20\_\_\_\_ at which a quorum was present and acting, it was voted  
that \_\_\_\_\_ of the \_\_\_\_\_, be and hereby is

\_\_\_\_\_ Name of Corporate Officer  
authorized to execute and deliver for and on behalf of the Corporation a Contract with  
the **FITCHBURG HOUSING AUTHORITY** for work to be done at **CREATIVE  
PLACEMAKING** Project No. 097156 in Fitchburg, Massachusetts.

And to act as principal to execute bonds in connection therewith, which Contract and  
Bonds were presented to and made part of the records of said meeting. I further certify  
that \_\_\_\_\_ Is duly qualified and acting

\_\_\_\_\_ Name of Corporate Officer  
\_\_\_\_\_ of the Corporation and that said vote has not been  
\_\_\_\_\_ Title  
repealed, rescinded or amended.

**A true copy of the record,**

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

**(CORPORATE SEAL)**

On this \_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, before me, the undersigned Notary Public,  
personally appeared \_\_\_\_\_, duly designated by the board of  
directors and proved to me, through satisfactory evidence of identification, which was  
\_\_\_\_\_, that s/he is the person whose name is  
signed on the foregoing documents, and acknowledged to me that s/he signed it  
voluntarily for its stated purpose and that it was her/his free act and deed.

\_\_\_\_\_  
Notary Public  
My Commission Expires:

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Bond No. \_\_\_\_\_

Section 00 61 01  
PAYMENT BOND - CONTRACTOR  
MGL c.30 §39M Over \$50K

**KNOW ALL MEN BY THESE PRESENTS:**

That we, \_\_\_\_\_  
as **Principal**, \_\_\_\_\_ and \_\_\_\_\_  
as **Surety**, are held and firmly bound unto the **Fitchburg Housing Authority** as  
**Obligee**, in the sum of  
\_\_\_\_\_ \$ \_\_\_\_\_.

to be paid to the Obligee, for which payments, well and truly to be made, we bind ourselves, our respective heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

**WHEREAS**, the said **Principal** has made a contract with the **Obligee**, bearing the date of \_\_\_\_\_, 20 \_\_\_\_\_ for the construction of **CREATIVE PLACEMAKING** Project No. 097156 in Fitchburg, Massachusetts.

**NOW** the conditions of this obligation are such that if the **Principal** and all subcontractors under said contract shall pay for all labor performed or furnished and for all materials used or employed in said contract and in any and all duly authorized modifications, alterations, extensions of time, changes or additions to said contract that may hereafter be made, notice to the **Surety** of such modifications, alterations, extensions of time, changes or additions being hereby waived, the foregoing to include any other purposes or items set out in, and to be subject to, provisions of M.G.L. c.30 §39A, and M.G.L. c.149 §29, as amended, then this obligation shall become null and void; otherwise it shall remain in full force and virtue.

**IN WITNESS WHEREOF**, the **Principal** and **Surety** have hereunto set their hands and seals this: \_\_\_\_\_ Day of \_\_\_\_\_ 20 \_\_\_\_\_.

**PRINCIPAL** \_\_\_\_\_ **SURETY** \_\_\_\_\_

By: \_\_\_\_\_ By: \_\_\_\_\_

Seal

Attorney-in Fact

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

The rate for the bond is \_\_\_\_\_ % for the first \$ \_\_\_\_\_  
and \_\_\_\_\_ % for the next \$ \_\_\_\_\_.  
The total premium for this bond is \$ \_\_\_\_\_.

Section 00 72 00  
**GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION**  
MGL c.30 §39M Over \$50K

TABLE OF CONTENTS

ARTICLE	PAGE
1. DEFINITION OF TERMS	2
2. AWARDING AUTHORITY AND THE EOHCL	3
3. CONTRACTOR	5
4. ADMINISTRATION OF THE CONTRACT	15
5. SUBCONTRACTORS	17
6. CONSTRUCTION BY AWARDING AUTHORITY/SEPARATE CONTRACT	18
7. CHANGES IN THE WORK	18
8. TIME, SCHEDULE, COMPLETION	21
9. PAYMENTS	26
10. GUARANTEES AND WARRANTIES	31
11. MISCELLANEOUS LEGAL REQUIREMENTS	32
12. CONTRACTOR'S ACCOUNTING REQUIREMENTS	34
13. EEO REQUIREMENTS	36
14. INSURANCE REQUIREMENTS	39
15. INDEMNIFICATION	41
16. PERFORMANCE AND PAYMENT BONDS	42
17. TERMINATION	42

## **ARTICLE 1 DEFINITION OF TERMS**

### **1.1 BASIC DEFINITIONS**

#### **1.1.1 THE CONTRACT DOCUMENTS**

The Contract Documents consist of the Awarding Authority-Contractor Agreement, Advertisement, Instructions to Bidders, Bidding Documents, Contract Forms, General Conditions of the Contract for Construction, Specifications, Drawings, all addenda issued prior to execution of the Contract, and other documents listed in the Agreement, EOHLIC publication known as the Construction Handbook, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Prime Designer.

#### **1.1.2 THE CONTRACT**

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification in writing and signed by the Awarding Authority, Prime Designer and General Contractor.

#### **1.1.3 THE WORK**

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

#### **1.1.4 THE PROJECT**

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Awarding Authority or by separate contractors.

#### **1.1.5 THE DRAWINGS**

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

#### **1.1.6 THE SPECIFICATIONS**

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

#### **1.1.7 THE CONSTRUCTION HANDBOOK**

The Construction Handbook is published by and available free of charge, from the EOHLIC. It outlines the procedures that the Contractor, Awarding Authority, Prime Designer, and the EOHLIC shall follow during the construction of the Work. The most recent version, at the time of bid opening, of the Construction Handbook is incorporated by reference into the Contract Documents.

### **1.2 EXECUTION, CORRELATION, AND INTENT**

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



- 1.2.2** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all. Performance by the Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results. In case of inconsistent requirements in the Contract Documents, the requirement for the greater quantity or higher quality shall take precedence and shall be the Contract requirement.
- 1.2.3.** Unless otherwise stated in the Contract Documents, words which have well known technical, or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.
- 1.2.4.** Where reference is made to standards or trade association publications, it shall be considered to refer to the latest edition and revision thereof, if any, in effect on the date the Contract Documents were advertised for bid.

### **1.3 USE OF DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS**

The Drawings, Specifications and other documents prepared by the Prime Designer, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor, or material or equipment supplier on other projects or additions to this Project outside the scope of the Work without the specific written consent of the Awarding Authority and the Prime Designer.

## **ARTICLE 2 AWARDING AUTHORITY AND THE EOHLC**

### **2.1 DEFINITION**

- 2.1.1** The term "Awarding Authority", sometimes also referred to as the " Authority" or " Owner", means the entity identified in the Awarding Authority - Contractor Agreement, organized and existing under the provisions of M.G.L. The Awarding Authority shall designate in writing a person or persons with the authority to contractually act on behalf of the Awarding Authority. This person or these persons shall be the "authorized signatory". If the Awarding Authority designates more than one authorized signatory, then the Awarding Authority shall explicitly define the limits and scope of each individual's authority to contractually act on behalf of the Awarding Authority.
- 2.1.2** The term "EOHLC" means the Massachusetts Executive Office of Housing and Livable Communities, 100 Cambridge St. Suite 300, Boston, MA 02114.
- 2.1.3** The term "Administrator" means the person appointed by the EOHLC to administer the terms of the Contract for Financial Assistance between the Awarding Authority and the EOHLC, who is also empowered to take certain actions under this Agreement. Contractor should address mail to the Administrator c/o the Construction Management Unit.
- 2.1.4** The term "Construction Advisor" means the person designated by the Administrator to assist the Administrator. The duties, responsibilities and limitations of the Construction Advisor's authority are described in the Construction Handbook.
- 2.1.5** Project Funding: The Work under this Contract is funded by the Commonwealth of Massachusetts through the EOHLC pursuant to a contract for financial assistance between the EOHLC and the Awarding Authority.

## **2.2 INFORMATION AND SERVICES TO BE PROVIDED BY THE AWARDING AUTHORITY**

**2.2.1** The Awarding Authority will furnish to the Contractor, free of charge, a minimum of three (3) copies or a reasonable number of copies of the Contract Documents for the execution of the Work, including a set for record purposes. The Contractor shall provide and distribute such a quantity of prints as required for the Contractor's and Subcontractors' use. Upon written request, an electronic copy of the drawings (.dwg files) will be made available to the Contractor or subcontractors for a fee of \$100/discipline or \$300 for all disciplines made payable to the Prime Designer. The Contractor acknowledges that electronic version of the documents may vary from the hard copy version in the Contract Documents. In the case of variations, the hard copy Contract Documents shall govern, and the Contractor is solely responsible for reconciling any discrepancies. Furthermore, the Contractor acknowledges that the electronic documents are for informational purposes only on the Project and neither the Awarding Authority nor the Prime Designer has any liability associated with the Contractor's use of the electronic documents.

**2.2.2** The Awarding Authority shall furnish available surveys describing physical characteristics, legal limitations, and utility locations for the site of the Project, and a legal description of the site.

## **2.3 AWARDING AUTHORITY'S RIGHT TO STOP THE WORK**

**2.3.1** If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents or persistently fails to carry out the Work in accordance with the Contract Documents, the Awarding Authority by written order signed personally or by its authorized agent, may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated.

**2.3.2** Stop work orders require the Awarding Authority's authorized signatory prior approval.

## **2.4 AWARDING AUTHORITY'S RIGHT TO CONDUCT THE WORK**

**2.4.1** If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within seven (7) calendar day period after receipt of written notice from the Prime Designer at the Awarding Authority's direction to commence and continue correction of such default or neglect with diligence and promptness, the Awarding Authority may, without prejudice to other remedies, hire one or more contractors to correct such deficiencies.

**2.4.2** In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Prime Designer's additional services and expenses made necessary by such default, neglect, or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Awarding Authority.

## **2.5 EOHLIC'S RESPONSIBILITIES**

**2.5.1** The Contractor is advised that various actions taken, or decisions made by the Awarding Authority and/or the Prime Designer under this Contract require the prior approval and countersignature of the Administrator. Those actions or decisions include, but are not limited to, the following:

- .1** Approval, substitutions, and final selection of Sub-Bidders pursuant to M.G.L. c.149 §44F.
- .2** Change Orders and Construction Change Directives, whether they affect a change in the Contract Sum or in the Contract Time.

- .3 Written orders, notices, and approvals given by the Owner pursuant to the Contract Documents or pursuant to any Laws applicable to this Contract, including approval of the Contractor's payment requests.
- .4 Approval of "or equal" submissions and substitutions pursuant to Subparagraph 3.6.3.
- .5 Stop Work order.
- .6 Certificate of Substantial Completion.
- .7 Final payment.
- .8 Termination of Contract.

**2.5.2** In any instance where the Contractor requires clarification as to whose approval is required, the Architect shall provide such clarification.

**2.5.3** Work undertaken by the Contractor or a Subcontractor at the Awarding Authority's or other person's order without the Administrator's countersignature prior to the start of such work shall be considered unauthorized work and shall not be considered cause for extra payment. The Contractor or Subcontractor shall be responsible for performing, at their own expense, corrective measures required by the Architect due to any failure to obtain the prior approval of the Administrator pursuant to Subparagraph 2.5.1.

**2.5.4** The EOHLIC and its authorized representatives and agents shall at all times have access to, and be permitted to observe and review all Work, materials, payrolls, records of personnel, conditions of employment, invoices of materials, and other relevant data and records maintained by the Contractor on the Project.

### **ARTICLE 3 CONTRACTOR**

#### **3.1 DEFINITION**

The Contractor, sometimes referred to as the General Contractor, is the person or entity identified as such throughout the Contract Documents as if singular in number and is the entity awarded the Contract and responsible for performing the Work. The term Contractor means the Contractor or its authorized representative.

#### **3.2 REVIEW OF CONTRACT DOCUMENTS & FIELD CONDITIONS BY CONTRACTOR**

**3.2.1** Before commencing the Work, the Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the Awarding Authority pursuant to Subparagraph 2.2.2 and shall at once report to the Prime Designer errors, inconsistencies, or omissions discovered. The Contractor shall not be liable to the Awarding Authority or Prime Designer for damage resulting from errors, inconsistencies, or omissions in the Contract Documents unless the Contractor recognized such error, inconsistency, or omission and knowingly failed to notify the Prime Designer. If the Contractor performs any construction activity knowing it involves a recognized error, inconsistency, or omission in the Contract Documents without such notice to the Prime Designer, the Contractor shall assume responsibility for such performance and shall bear the attributable costs for correction.

**3.2.2** Before commencing the Work, the Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents. Errors, inconsistencies, or omissions discovered shall be reported in writing to the Prime Designer at once.

**3.2.3** The Contractor shall perform the Work in accordance with the Contract Documents and submittals approved pursuant to Paragraph 3.7.

**3.3 SUPERVISION AND CONSTRUCTION PROCEDURES, COORDINATION, AND CUTTING AND PATCHING**

- 3.3.1** The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have sole control over construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract.
- 3.3.2** The Contractor shall be responsible for the proper fitting of all Work and the coordination of the operations of all trades, Subcontractors, or materialmen engaged upon the Work.
- 3.3.3** All necessary cutting, coring, drilling, grouting, and patching required to fit together the several parts of the Work shall be done by the Contractor, except as may be specifically noted otherwise under any particular filed sub-bid section of the Specifications.
- 3.3.4** The Contractor shall be responsible to the Awarding Authority for acts and omissions of the Contractor's employees, Subcontractors, and their agents and employees, and other persons performing portions of the Work.
- 3.3.5** The Contractor shall be responsible for inspection of portions of Work already performed under this Contract to determine that such portions are in proper condition to receive subsequent Work.
- 3.3.6** The Contractor shall do engineering required for establishing grades, lines, levels, dimensions, layouts, and reference points for the trades; shall be responsible for maintaining benchmarks and other survey marks; and shall replace any benchmarks or survey marks which have been disturbed or destroyed.
- 3.3.7** Unless otherwise required by the Contract Documents, or directed in writing by the Awarding Authority, Work shall be done during regular working hours as established in the Contract Documents. However, if the Contractor desires to carry on the Work outside of regular working hours on Saturdays, Sundays or on Massachusetts and Federal holidays (irregular work hours), the Contractor shall notify the Awarding Authority at least seven (7) calendar days in advance or shall allow the Awarding Authority ample time to make satisfactory arrangements for inspecting Work in progress. The Contractor shall bear the costs of such inspection and all Work performed during irregular work hours. The Awarding Authority shall bill the Contractor directly for any costs incurred by the Awarding Authority to accommodate the irregular Work hours.
- 3.3.8** Work done outside of regular working hours without the consent or knowledge of the Awarding Authority shall be subject to additional inspection and testing as directed by the Prime Designer. The cost of this inspection and testing shall be paid by the Contractor whether the Work is found to be acceptable or not. The Awarding Authority may issue a credit change order to cover such costs or may withhold such costs from any further payments due to the Contractor or the Contractor may issue a separate payment for such costs.

**3.4 SUPERINTENDENT**

- 3.4.1** The Contractor shall employ a Superintendent and necessary assistant who shall be in full-time attendance at the Project site during performance of all the Work. The Superintendent shall represent the Contractor, and communications given to the Superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.
- 3.4.2** The Superintendent shall be a competent and responsible employee, satisfactory to the Awarding Authority, who is regularly employed by the Contractor and is designated by the Contractor as its

representative to be in full time attendance at the Project site throughout the construction of the Work. The Superintendent shall be responsible for coordinating all the Work of the Contractor and the Subcontractors.

- 3.4.3** The Superintendent shall be licensed consistent with the Massachusetts Building Code. The Contractor shall submit Superintendent's resume to the Awarding Authority prior to commencement of construction and must demonstrate to the Awarding Authority's reasonable satisfaction that the Superintendent has performed similar duties on previous construction projects similar to the Project.
- 3.4.4** The Superintendent shall attend each job meeting.

### **3.5 LABOR**

The Contractor shall enforce strict discipline and good order among the Contractor's employees, Subcontractors, and other persons conducting the Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them, and whenever the Awarding Authority shall notify the Contractor, in writing, that any worker is, in its opinion, incompetent, unfaithful, disorderly, or otherwise unsatisfactory, such employee shall be discharged from the Work and shall not again be employed on the Project except with the consent of the Awarding Authority.

### **3.6 MATERIALS AND EQUIPMENT**

- 3.6.1** Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether incorporated or to be incorporated in the Work.
- 3.6.2** Materials and Equipment to be installed as part of the Contract (both or either of which are hereinafter referred to as "Materials") shall be new, unused, of recent manufacture, assembled, and used in accordance with the best construction practices.

### **3.6.3 "OR EQUAL" SUBMISSIONS/SUBSTITUTIONS**

- .1** Except where a product has been specified as a proprietary material, the words "or equal" are understood to follow the name of any maker, vendor, or product specified to be used in the Contract Documents. To determine if the materials or articles proposed by the Contractor are equal to those specified, the Prime Designer shall determine whether the materials or articles proposed are at least equal in quality, durability, appearance, strength and design to the material or articles named or described and will perform at least equally the functions imposed by the design. See M.G.L. c.30 §39M.
- .2** The Contractor shall be responsible for providing the Prime Designer with any information and test results the Prime Designer reasonably requires to determine if a material is equal to a material named or described in the Contract Documents.
- .3** Whenever the Contractor submits a material for approval as a substitute for a material named or described in the Contract Documents, such submission shall be made at least one hundred and twenty (120) calendar days prior to the date the materials will be used on the Project. In any case in which the construction performance period specified in the Contract Documents from the Notice to Proceed to Substantial Completion is less than 120 days, the Prime Designer may modify this requirement. However, in no event shall the Contractor maintain a claim for delays based upon the Prime Designer's review of such substituted materials if the Contractor has failed to comply with the one hundred and twenty (120) day submission requirement.
- .4** Substitution Process:
  - a. The Contractor shall pay direct attention to any deviations, including minor limitations and

variations, from the Contract Documents on the Substitution Request Form in Section 01 33 01.

- b. The Contractor shall submit to the Prime Designer for consideration of any Or-Equal substitution a written point-by-point comparison containing the name and full particulars of the proposed product and the product named or described in the Contract Documents.
- c. The Contractor shall be solely responsible for the timely submission of supporting documentation.
- d. Upon receipt of a written request for approval of an Or-Equal substitution from the Contractor, the Prime Designer shall investigate whether the proposed item shall be considered equal to the item named or described in the Contract Documents. The Prime Designer will have up to ninety (90) calendar days to perform the investigation and make an evaluation.
- e. Upon conclusion of the investigation, the Prime Designer shall promptly advise the Awarding Authority in writing if the item is, or is not, considered acceptable as an Or-Equal substitution with documentation to support the determination.
- f. The Prime Designer or Awarding Authority may require that full size samples of both the specified and proposed products be submitted for review and evaluation. The Contractor shall bear full cost for providing, delivering, and disposal of all such samples.
- g. The Awarding Authority will then determine concurrence as to the equality of the submitted item and render an approval in writing within seven (7) calendar days after receipt of the Prime Designer's recommendation.
- h. Should the Prime Designer determine that the submitted product substitution is not equal to the specified standard, the Prime Designer shall send written notice of this to the Contractor.
- i. Proceeding with Work using the submitted item without the written approval of the Awarding Authority may result in rejection of the Work and removal and replacement at the expense of the Contractor.
- j. The Contractor shall assume full responsibility for the performance of any item submitted as an Or-Equal and assume the costs of any changes in any Work that may be caused by such substitution.

### **3.7 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES**

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

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

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

**3.7.4** Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. The purpose of their submission is to demonstrate for those portions of the Work for which submittals are required the way the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review by the Prime Designer is subject to the limitations of Subparagraph 3.7.9.

**3.7.5** The Contractor shall review, approve, and submit to the Prime Designer Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Awarding Authority or of separate contractors. Submittals made by the Contractor which are not required by the Contract Documents may be returned without action. The Contractor's attention is directed to the provisions of

Subparagraph 3.6.3 entitled "Or Equal" Submissions/Substitutions and Section 01 30 00 of the Specifications.

- 3.7.6** The Contractor shall prepare and keep current, for the Prime Designer's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule submitted pursuant to Paragraph 8.4 and allows the Prime Designer reasonable time to review submittals. The Prime Designer shall have up to fourteen (14) calendar days from receipt to review and act on submittals, unless the Prime Designer notifies the Contractor in writing within seven (7) calendar days that no action will be taken on a submittal that must be coordinated with another submittal that the Contractor has not yet submitted. In this case, the Prime Designer shall have fourteen (14) calendar days from receipt of all associated submittals that must be coordinated together.
- 3.7.7** The Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples, or similar submittals until the Prime Designer has approved the respective submittal. Such Work shall be in accordance with approved submittals. Otherwise, the Contractor bears the sole responsibility and the associated costs for Work that may need to be re-accomplished because the Work does not comply with the approved submittal.
- 3.7.8** By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements, and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.
- 3.7.9** The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Prime Designer's approval of Shop Drawings, Product Data, Samples, or similar submittals unless the Contractor has specifically informed the Prime Designer in writing of such deviation at the time of submittal and the Awarding Authority has given explicit written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals by the Prime Designer's actions.
- 3.7.10** The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Prime Designer on previous submittals.
- 3.7.11** Informational submittals upon which the Prime Designer is not expected to take responsive action may be so identified in the Contract Documents.
- 3.7.12** When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the Prime Designer shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

### **3.8 SAMPLES AND TESTS**

- 3.8.1** Materials to be used in the Work may be tested or inspected after reasonable notice by the Prime Designer and may be rejected if they fail the specified tests. Except as otherwise provided in the Contract, all testing of material specifically requested by the Prime Designer will be paid for by the Awarding Authority, except that the cost of testing of materials that fail the testing criteria shall be borne by the Contractor. If the Contractor requests permission to use a material that was not specified in the Contract Documents and the Prime Designer requires testing of such material before approving its use, the Contractor shall pay for such testing.
- .1** The Prime Designer shall provide written notice of failure within seven (7) calendar days after testing. The Contractor shall have fourteen (14) calendar days to remediate the issue by repair or replacement of the failed materials as directed by the Prime Designer. The specified time periods in this section can be modified with written consent of both the Prime Designer

and Contractor.

- 3.8.2** The source of material proposed by the Contractor shall be designated in time to permit all required testing and inspection before the material is needed for incorporation into the Work. The Contractor shall have no claim for delays due to testing if it fails to designate the proposed source or to order the material in time to provide for adequate testing and inspection. Necessary arrangements shall be made to permit the Prime Designer to make factory, shop, or other inspection of materials or equipment ordered for the Work, in process of manufacture or fabrication, or in storage elsewhere than the site of the Work.
- 3.8.3** The Contractor shall furnish the Prime Designer with samples of the materials it proposes to use in the execution of the Work in sufficient time to afford the Prime Designer the opportunity to adequately review and, if necessary, arrange for testing of such materials. The Prime Designer shall have fourteen (14) calendar days upon receipt to review all samples and shall issue written notification to the Contractor with seven (7) calendar days if additional time is required for testing such materials.

### **3.9 DELIVERY AND STORAGE OF MATERIALS**

- 3.9.1** Materials and equipment shall be progressively delivered to the site so that there will be neither delay in the progress of the Work nor an undue accumulation of materials that are not to be used within a reasonable time.
- .1** Materials stored on-site will be stored in the area designated by the Awarding Authority and shall not interfere with the Awarding Authority's operations. The risk of loss of any stored materials shall be solely the responsibility of the Contractor.
- 3.9.2** Materials stored off-site shall be stored at the expense of the Contractor in a manner that preserves their quality and fitness for the Work.
- 3.9.3** If the Contractor requests the Prime Designer's inspection of materials stored off-site, the Contractor shall assume the Prime Designer's reasonable costs for time, travel, room, and meals associated with such inspection.
- 3.9.4** Materials stored either at the site or at some other location agreed upon in writing shall be located to facilitate prompt inspection and may again be inspected prior to their use in the Work.
- 3.9.5** The Contractor shall take charge of and be liable for any loss of or injury to the materials delivered at or in the vicinity of the place where the Work is being done and shall notify the Prime Designer as soon as any such materials are so delivered and allow them to be examined by the Prime Designer.
- 3.9.6** Payment for stored materials shall be made in accordance with Paragraph 9.4.

### **3.10 WARRANTY**

The Contractor warrants to the Awarding Authority and Prime Designer that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the Prime Designer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

### **3.11 REJECTION OF DEFECTIVE MATERIALS**

The Prime Designer may reject materials if the Prime Designer reasonably determines that such materials do



not conform to the Contract Documents. No rejected materials, the defects of which have been subsequently corrected, shall be used in the Work except with the written permission of the Prime Designer. No extra time shall be allowed for completion of the Work due to the rejection of non-conforming materials.

### **3.12 REJECTION OF DEFECTIVE WORK**

The Prime Designer's inspection of the Work shall not relieve the Contractor of any of its responsibilities to fulfill the Contract obligations, and defective Work shall be corrected. Unsuitable Work may be rejected by the Prime Designer, notwithstanding that such Work and materials have been previously overlooked or misjudged by the Prime Designer and accepted for payment. If the Work or any part thereof shall be found defective at any time before the final acceptance of the whole Work, the Contractor shall forthwith correct such defect in a manner satisfactory to the Prime Designer, and if any material brought upon the site for use in the Work, or selected for the same, shall be rejected by the Prime Designer as unsuitable or not in conformity with the Contract requirements, the Contractor shall forthwith remove such materials from the Work.

### **3.13 MATERIALS ATTACHED OR AFFIXED TO THE WORK**

Nothing in this Contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been attached or affixed to the Work or the soil; but all such materials shall, upon being so attached or affixed, become the property of the Awarding Authority.

### **3.14 SALES TAX EXEMPTION AND OTHER TAXES**

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

**3.14.2** The Contractor shall be responsible for paying all other taxes and tariffs of any sort related to the Work.

### **3.15 DOCUMENTS AND SAMPLES AT THE SITE**

The Contractor shall maintain at the Site for the use and information of the Awarding Authority, one record copy of the Drawings, Specifications, Addenda, Change Orders, and other Contract Modifications, in good order and marked currently to record changes and selections made during construction, and in addition approved Shop Drawings, Product Data, Samples, updated construction schedule, and similar required submittals. These shall be available to the Prime Designer and shall be delivered to the Prime Designer for submittal to the Awarding Authority upon completion of the Work.

### **3.16 PERMITS, FEES, AND NOTICES**

**3.16.1** The Contractor shall secure and pay for all permits, licenses, and fees required for the proper execution of the Work. The Contractor shall coordinate all efforts required to obtain these permits with the Awarding Authority's Project Manager or as otherwise provided in the Specifications. The Contractor shall be reimbursed by the Awarding Authority via a change order for permits charges at the direct costs with no mark-ups via the change order process.

- 3.16.2** The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on performance of the Work.
- 3.16.3** It is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if the Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the Prime Designer and Awarding Authority in writing, and necessary changes shall be accomplished by appropriate Modification.
- 3.16.4** If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes, and rules and regulations without such notice to the Prime Designer and Awarding Authority, the Contractor shall assume full responsibility for such Work and shall bear the attributable costs.
- 3.16.5** The Contractor and/or subcontractor shall be responsible for coordinating and paying utility back charges as part of the Base Contract. The Contractor shall be reimbursed by the Awarding Authority via a change order for utility back charges at the direct costs with no mark-ups via the change order process.
- 3.16.6** The Contractor and/or subcontractor shall be responsible for coordinating and paying for Police detail charges as part of the Base Contract. The Contractor shall be reimbursed by the Awarding Authority via a change order for Police details charges at the direct costs with no mark-ups via the change order process.

**3.17 DEBRIS, CHEMICAL WASTE**

- 3.17.1** The Contractor shall not permit the accumulation of debris, both exterior and interior, and the work area shall always be kept satisfactorily clean.
- 3.17.2** The Contractor shall remove debris from the site of the Work and legally dispose of it at any private or public dump that the Contractor may choose. The Contractor shall make all arrangements and obtain any approvals necessary for said disposal from the Awarding Authority's or officials in charge of such dumps and shall bear all cost, including fees resulting from such disposal. Garbage shall be removed daily.
- 3.17.3** No open fire shall be permitted on site.
- 3.17.4** Chemical Waste: Chemical waste shall be stored in corrosion resistant containers, removed from the Project site, and disposed of not less frequently than monthly unless directed otherwise. Disposal of chemical waste shall be in accordance with requirements of the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP). Fueling and lubricating of vehicles and equipment shall be conducted in a manner that affords the maximum protection against spills and evaporation. Lubricants to be discarded or burned shall be disposed of in accordance with approved procedures meeting all applicable Federal, State, and local regulations. In the event of an oil or hazardous materials spill large enough to violate Federal, State, or applicable local regulations, the Contractor shall immediately notify the Awarding Authority and the Prime Designer. The Contractor shall be responsible for immediately cleaning up any oil or hazardous waste spills resulting from its operations. Any costs incurred in cleaning up any such spills shall be borne by the Contractor.

**3.18 SITE AND WEATHER PROTECTION**

- 3.18.1** The Contractor shall take precautions during the execution of Work involving demolition not to disturb or damage any existing structures, landscaping, walks, roads, or other items scheduled to remain. The Contractor shall restore any damaged items to their original condition and/or as

directed by the Prime Designer. The Contractor shall provide and erect acceptable barricades, fences, signs, and other traffic devices to protect the work from traffic and the public as reasonably necessary and as required by the Massachusetts Building Code.

- 3.18.2** The Contractor shall install weather protection and provide adequate heat in the protected area from November 1 to March 31 as required by M.G.L. c.149 §44G. The Contractor shall pay for all weather protection and temporary heat required for the Project.

### **3.19 ARCHAEOLOGICAL AND HISTORICAL RESOURCES**

All items having any apparent historical or archaeological interest which discovered by the Contractor during any construction activities shall be carefully preserved and reported immediately to the Prime Designer for determination of appropriate actions to be taken.

- 3.19.1** If the nature of the item is such that the Work cannot proceed without danger of damaging same, Work in that area shall be immediately discontinued until the Awarding Authority has decided the proper procedure to be followed.

**3.19.2** Any time lost thereby shall be a condition for which the time of the Contract may be extended.

**3.19.3** All costs incurred after discovery in the salvaging of such items shall be borne by the Awarding Authority.

### **3.20 SAFETY REQUIREMENTS**

**3.20.1** The Contractor must comply with all Federal, State, and Local safety laws and regulations of the applicable to work performed under this Contract.

- .1** Before commencing any portion of the Work, the Contractor shall submit a written Project-specific plan for implementing this Section. The plan shall include an analysis of the significant hazards to life, limb, and property inherent in the performance of the Work and a plan for controlling those hazards. The Contractor is solely responsible for implementing and maintaining the safety requirements on the Project.
- .2** The Contractor shall be responsible for its Subcontractors' compliance with the provisions of this Section.

**3.20.2** In performing the Work, the Contractor shall:

- .1** Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his/her health and/or safety as determined under construction safety and health standards promulgated by the U.S. Secretary of Labor by regulation.
- .2** Protect the lives, health and safety of other persons and shall,
  - a. Comply with 84 Stat. 1590, the "Occupational Safety and Health Act of 1970" (OSHA) and with regulations and standards issued by the U.S. Secretary of Labor at 29 CFR Part 1926; and
  - b. Comply with the Trench Safety Law set forth in M.G.L. c. 82A and regulations promulgated by the Departments of Public Safety (DPS) and Occupational Safety (DOS) in 520 CMR 14.00 et seq.; the Contractor shall execute a Trench Application and Permit form with the execution of its contract.
  - c. Comply with M.G.L. c. 149, s. 129A, relative to shoring and bracing of trenches.
  - d. If the Contractor uses or stores toxic or hazardous substances, comply with M.G.L. c.111F §2, the "Right to Know" law and regulations promulgated by the Department of Public Health, 105 CMR 670, the Department of Environmental Protection, 310 CMR 33, and the Department of Labor and Workforce Development, 441 CMR 21; and must post a Workplace Notice obtainable from the Department of Labor and Workforce Development.

- e. Comply with the Federal Resource Conservation and Recovery Act, the Federal Comprehensive Environmental Response Compensation and Liability Act, M.G.L. c. 21C, M.G.L. c. 21E, and any other Laws affecting toxic or hazardous materials, solid, special or hazardous waste (collectively "Hazardous Materials Laws"). Should the Contractor discover unforeseen materials subject to Hazardous Materials Laws at the Site, the Contractor shall immediately comply with all requirements for dealing with such materials and notify all required governmental authorities and the Awarding Authority of such discovery.
- f. Include these terms in every subcontract so that such terms will be binding on each subcontractor.
- g. Designate by notice to the Awarding Authority a responsible member of its organization at the Site whose duties shall include ensuring safety, implementation of Contractor's Safety Plan referenced below and preventing accidents.

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

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

**3.20.5** The Contractor shall be responsible for the location of utilities in connection with the Work. Without limiting the foregoing, the Contractor shall comply with Dig-Safe Laws. Dig-Safe is the Utility Underground Plant Damage Prevention System, 331 Montvale Ave., Woburn, MA 01801, 1.888.344.7233. The Contractor shall notify Dig-Safe of contemplated excavation, demolition, or explosive work in public or private ways, and in any utility company right of way or easement, by certified mail, with a copy to Department of Environmental Protection (DEP). This notice shall be given at least 72 hours prior to the work, but not more than sixty days before the work is to be done. Such notice shall state the name of the street or the route number of the way and shall include an accurate description of the location and nature of the proposed work. Dig-Safe is required to respond to the notice within 72 hours of receipt by designating the location of pipes, mains, wires, or conduits at the site. The Contractor shall not commence work until Dig-Safe has responded. The Work shall be performed in such manner and with reasonable precautions taken to avoid damage to utilities under the surface at the Work location. The Contractor shall provide the Superintendent with current Dig-Safe regulations, and a copy of M.G.L. c.82 §40. Any costs related to the services performed by Dig-Safe shall be borne by the Contractor.

**3.20.6** If this Project requires the containment or removal of asbestos or material containing asbestos, lead or waste containing lead-based paint, the Contractor shall ensure that the person or company performing the asbestos or lead related services is licensed pursuant to applicable State laws and regulations.

**3.20.7** Without limiting the Contractor's responsibilities described above, the Contractor shall take all reasonable precautions for the safety of, and the prevention of injury or damage to (1) all agents and employees and contractors on the Work and all other persons who may be affected thereby including the general public, (2) all the Work and all materials and equipment to be incorporated therein, whether in storage on or off the Site, under the care custody or control of the Contractor or any of its Subcontractors or any contractors directly or indirectly contracting through any of them, and (3) other property at the Site or adjacent thereto, including but not limited to trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of the Work. The Contractor shall promptly remedy all damage or loss to any such property caused in whole or in part by the Contractor, any Subcontractor, or

anyone directly or indirectly contracted or employed by any of them or by anyone for whose acts any of them may be liable. Without limiting the foregoing, the Contractor shall:

- (1) Post and maintain adequate danger signs and other warnings against hazards;
- (2) Promulgate safety regulations and give appropriate notices to the Owner and users of adjacent utilities and property;
- (3) Ensure the adequate strength and safety of all scaffolding, staging and hoisting equipment, temporary shoring, bracing and tying;
- (4) Protect adjoining private or public property;
- (5) Provide barricades, temporary fences, and covered walkways required by prudent construction practices, Laws, and/or the Contract Documents;
- (6) Furnish approved hard hats and other personal protective equipment, furnish approved first aid supplies, furnish the name of the first aid attendant, and maintain a posted list of emergency facilities;
- (7) Provide a proper means of access to property where the existing access is cut off by the Contractor;
- (8) Maintain from the beginning of any darkness or twilight through the whole of every night sufficient lights on or near any obstruction so as to guard and protect travelers from injury from such obstruction;
- (9) Maintain adequate security at the Site so as not to expose the Work and surrounding property to vandalism or malicious mischief;
- (10) Provide adequate fire protection procedures during the use of cutting torches, welding equipment, plumbers' torches and other flame and spark producing apparatus; and
- (11) Take prompt action to correct any dangerous or hazardous conditions.

**3.20.8** The Contractor shall not use or store explosives in the performance of the Work unless the Contractor first obtains the Awarding Authority's prior written approval. If the Awarding Authority approves the use or storage of explosives during the performance of the Work, the Contractor shall first comply with all Laws and obtain all permits, approvals, and certificate required in connection with the same and shall exercise best efforts, including but not limited to the employment and supervision of properly qualified personnel, to prevent damage, injuries, and accidents involving said explosives.

**3.20.9** The Contractor shall not permit cutting or welding in or immediately adjacent to existing property of the Awarding Authority or of anyone else without the Awarding Authority's prior approval in each instance.

### **3.21 ACCESS TO WORK**

The Contractor shall always provide access to the Work to the Awarding Authority and the Prime Designer and shall cooperate with the Awarding Authority whenever the Awarding Authority invites visitors to the Site.

### **3.22 MEETINGS AND PROJECT DIRECTORY**

**3.22.1** Meetings: The Contractor shall attend the pre-construction meeting, the regular job meetings and the final punchlist inspections. The meetings will be scheduled by the Prime Designer at a mutually agreed upon time by the Awarding Authority, the Prime Designer, and the Contractor. The Contractor's representative that attends the meeting shall have authority to act on behalf of the Contractor. If requested by the Prime Designer, the Contractor's Superintendent shall attend the regular job meetings.

**3.22.2** Project Directory: Prior to the commencement of construction, the Contractor shall submit a Project Directory, in writing, that includes the Contractor's personnel, subcontractors and principal vendors on the Project. The Directory shall include the trade, company name, company address,

company phonenummer and the contact person's name and direct phone number for each company. In addition, the Project Directory shall include the telephone number of a responsible person that may be contacted during non-work hours for emergencies on the Project. The Contractor shall regularly update the ProjectDirectory and submit a final copy of the Project Directory as part of the Project close-out documentation.

## **ARTICLE 4 ADMINISTRATION OF THE CONTRACT**

### **4.1 PRIME DESIGNER**

The Prime Designer is the person or entity licensed to practice architecture or engineering, who is responsible for performing the duties assigned to the Prime Designer by the Contract Documents.

### **4.2 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION**

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Awarding Authority and Contractor shall communicate through the Prime Designer. Communications by and with the Prime Designer's consultants shall be through the Prime Designer. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communication by and with separate contractors shall be through the Awarding Authority.

### **4.3 PRIME DESIGNER'S ADMINISTRATION OF THE CONTRACT**

- 4.3.1** The Prime Designer will provide administration of the Contract as described in the Contract Documents and will be the Awarding Authority's representative (1) during construction, (2) until final payment is due and (3) with the Awarding Authority's concurrence, from time to time during the guarantyperiod described in Article 10. The Prime Designer will advise and consult with the Awarding Authority.
- 4.3.2** The Prime Designer will regularly visit the site, conduct job meetings, and keep the Awarding Authority informed of the progress and quality of the Work, and will endeavor to guard the Awarding Authority against defects and deficiencies in the Work. The Prime Designer's minutes of meetings shall be the official minutes kept on the Project.
- 4.3.3** Based on the Prime Designer's observations and evaluations of the Contractor's Applications for Payment, the Prime Designer will review and certify the amounts due the Contractor and will submit to the Awarding Authority for their consideration Certificates for Payment in such amounts as the Prime Designer determines appropriate.
- 4.3.4** The Prime Designer shall reject Work that does not conform to the Contract Documents. Whenever the Prime Designer considers it necessary or advisable to achieve the intent of the Contract Documents, the Prime Designer will have authority to require additional inspection or testing of the Work in accordance with Paragraph 3.8.
- 4.3.5** The Prime Designer will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples within fourteen (14) calendar days, but only for the limited purpose of checking such submittals for conformance with the information given and the design concept expressed in the Contract Documents. This review shall be in accordance with the provisions of Subparagraph 3.6.3 and the procedures described in Section 01 33 00 of the Specifications and shall not relieve the Contractor from compliance with the requirements of the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the site; for information that pertains solely to the fabrication process or to the means, methods, techniques, sequences, and procedures of construction; and for coordination work for all trades.

- 4.3.6 The Prime Designer will prepare Change Orders and Construction Change Directives and may authorize Minor Changes in the Work as provided in Paragraph 7.1.
- 4.3.7 The Prime Designer will conduct inspections to determine the date or dates of Substantial Completion and the date of Final Completion, will receive and forward to the Awarding Authority for the Awarding Authority's review and records written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.
- 4.3.8 The Awarding Authority may provide one or more project representatives to assist in carrying out the Prime Designer's responsibilities at the Site. The duties, responsibilities, and limitations of authority of such project representatives shall be explained at the pre-construction conference.
- 4.3.9 The Prime Designer will interpret and decide matters concerning performance under and requirements of the Contract Documents on written request of either the Awarding Authority or Contractor. The Prime Designer's written response to such requests will be made within the thirty-day (30) time limit prescribed in Paragraph 7.6.3.
- 4.3.10 The Prime Designer's decisions on matters relating to aesthetic effects will be final if consistent with the intent expressed in the Contract Documents.

#### 4.4 PROCEDURES AND PRACTICES

The EOHLC's procedures, forms, and practices which must be employed on the Project are described in the Construction Handbook and will be explained at the pre-construction conference.

#### 4.5 PRE-CONSTRUCTION CONFERENCE

Prior to commencement of the Work, the Contractor shall meet in conference with representatives of the Awarding Authority and Prime Designer to discuss and develop mutual understandings relative to administration of the quality assurance program, safety program, labor provisions, the schedule of work, and other Contract procedures.

### ARTICLE 5 SUBCONTRACTORS

#### 5.1 DEFINITION

- 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the work at the site.
- 5.1.2 The Contractor shall require each Subcontractor to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor assumes toward the Awarding Authority and the Prime Designer.

#### 5.2 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

- 5.2.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Awarding Authority provided that:
  - 5.2.1.1 assignment is effective only after termination of the Contract by the Awarding Authority for cause pursuant to Paragraph 17.1 and only for those subcontract agreements which the Awarding Authority accepts by notifying the Subcontractor in writing; and

5.2.1.2 assignment is subject to the prior rights of the surety obligated under bond relating to the Contract.

## **ARTICLE 6 CONSTRUCTION BY AWARDING AUTHORITY OR BY SEPARATE CONTRACTORS**

### **6.1 AWARDING AUTHORITY'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS**

- 6.1.1** The Awarding Authority reserves the right to perform construction or operations related to the Project with the Awarding Authority's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site. If the Contractor claims that delay or additional cost is involved because of such action by the Awarding Authority, the Contractor shall make such claim as provided elsewhere in the Contract Documents.
- 6.1.2** The Awarding Authority shall provide for coordination of the activities of the Awarding Authority's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Awarding Authority in reviewing and coordinating their construction schedules with one another when directed to do so.

### **6.2 MUTUAL RESPONSIBILITY**

- 6.2.1** The Contractor shall afford the Awarding Authority and the separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.
- 6.2.2** If part of the Contractor's Work depends on proper execution or results upon construction or operations by the Awarding Authority or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Prime Designer apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor to so report shall constitute an acknowledgment that the Awarding Authority's or separate contractors completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.
- 6.2.3** The Contractor shall promptly remedy damage wrongfully caused by the Contractor to complete or partially completed construction or to property of the Awarding Authority or separate contractors.

## **ARTICLE 7 CHANGES IN THE WORK**

### **7.1 CHANGES - DEFINITIONS**

- 7.1.1** All changes in the Work, including any increase, decrease, or other equitable adjustment in the Contract Sum or in the time for performing the Contract, shall be authorized in the form of one, or a combination of, the following written instruments: Change Order, Construction Change Directive, or a Minor Change in the Work. The term "equitable adjustment" as used in this paragraph shall include all adjustments to the Contract Sum or time to which the Contractor is entitled pursuant to M.G.L. c.30 §§39N and 39O and such equitable adjustment shall be made in accordance with the provisions of this Article.



- 7.1.2** A Minor Change is a written order binding on the Awarding Authority and Contractor issued by the Prime Designer, with the concurrence of the Construction Advisor, not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. The Contractor shall carry out such written orders promptly.
- 7.1.3** A Change Order is a written instrument prepared by the Prime Designer and signed by the Awarding Authority, Contractor, and Prime Designer, stating their agreement regarding a change in the work, including a change in the Contract Sum or Contract Time.
- 7.1.4** A Construction Change Directive is a written order prepared by the Prime Designer and signed by the Awarding Authority and Prime Designer directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum, or Contract Time, or both. The Awarding Authority may, by Construction Change Directive, and without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.
- 7.1.5** A Change Order shall be based upon agreement among the Awarding Authority, Contractor, and Prime Designer; a Construction Change Directive requires agreement by the Awarding Authority and Prime Designer may or may not be agreed to by the Contractor; an order for a Minor Change in the Work may be issued by the Prime Designer with the concurrence of the Awarding Authority.
- 7.1.6** Change Orders and Construction Change Directives must be counter-signed by the Administrator in accordance with Subparagraph 2.5.1.2 to be effective.

## **7.2 REQUEST FOR A CHANGE IN THE WORK**

A change order request shall be in writing and may originate from the Awarding Authority, the Prime Designer, or the Contractor. If such a request causes a change in the Contract Sum, the Contractor shall promptly submit to the Prime Designer its cost and pricing data for such proposed change. Such data shall be accurate, current, and complete at the time of submission and shall be computed in accordance with Subparagraph 7.3.1.

## **7.3 METHOD FOR DETERMINING THE AMOUNT OF CHANGE**

- 7.3.1** Changes in the Contract Sum shall be calculated in accordance with one or a combination of the following methods, as determined by the Prime Designer:
- .1** Lump sum basis, provided the lump sum amount shall include the estimated cost of the change, broken down by Items **a** through **i** in the following Subparagraph **.3**.
  - .2** Unit price basis, to be adjusted in accordance with contract unit prices, or other agreed upon unit prices provided that the unit prices shall be inclusive of all costs related to such equitable adjustment.
  - .3** Time and materials basis, on a not-to-exceed predetermined upset amount determined by the Prime Designer, to be subsequently adjusted based on the Contractor's actual costs based on the following items **a** through **i**:
    - a.** Cost of labor at the rates found elsewhere in this document, including foremen;
    - b.** Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
    - c.** Rental cost of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others.
    - d.** A percent of the net increase or decrease of Item **a** to cover Worker's Compensation, F.I.C.A., and unemployment contributions.
    - e.** The percentage for Worker's Compensation in Item **d** above shall not exceed the standard manual rate for the involved trade, as set by the Worker's Compensation Rating and Inspection Bureau of Massachusetts. This rate shall not include any surcharges such as experience modifications and all risk factor adjustment programs, etc.

- f. For work performed by the Contractor's own forces, there shall be added an amount of 15% of items **a - d** for overhead, superintendence, and profit.
- g. For work performed by any Subcontractor, there shall be added an amount of 15% of the Subcontractor's costs for Items **a - d** for the Subcontractor's overhead, superintendence, and profit. The Contractor shall be entitled to an additional 10% mark-up on the total amount of the Subcontractor's price as compensation for assuming full responsibility and supervision for the Subcontractor's work.
- h. Actual increases in the premium costs for performance and payment bonds required of the Contractor and filed Subcontractors, provided there will be an appropriate credit for reduced premiums for a credit change order.
- i. On any change in the Contract Sum that involves a credit, the amount of the credit will not include an overhead and profit factor, however, the credit will include an amount for item **d**. which shall not be less than 25% of item **a**.

**7.3.2** The method provided in Subparagraph 7.3.1, for compensating the Contractor and Subcontractors for changes in the Work, shall be considered to adequately compensate the Contractor and Subcontractors for all costs directly, indirectly, or consequentially related to, or caused by, such change in the work.

#### **7.4 WORK PERFORMED UNDER PROTEST**

The Contractor shall perform all work as directed by the Prime Designer, and if the Prime Designer determines that certain work for which the Contractor has requested a change order does not represent a change in the Contract, or if the Contractor and the Prime Designer cannot agree to the amount of compensation for a change order, the Contractor shall perform said work under protest and must follow the notice requirements and maintain the records required by Subparagraph 7.7.3.

#### **7.5 STATUTORY CHANGE ORDER PROVISIONS**

The Contractor's attention is directed to the Massachusetts General Laws Chapter 30, §§ 39I, 39J, 39N, 39O and 39P, the provisions of which apply to this Contract.

#### **7.6 DIFFERING SITE CONDITIONS, M.G.L. c.30 §39N**

**7.6.1** If, during the progress of the Work, the Contractor or the Awarding Authority discovers that the actual subsurface or latent physical conditions encountered at the site differ substantially or materially from those shown on the plans or indicated in the Contract Documents, either the Contractor or the Awarding Authority may request an appropriate time extension and an equitable adjustment in the Contract Sum applying to work affected by the differing site conditions. A request for such an adjustment shall be in writing and shall be delivered by the Contractor making such claim to the Prime Designer and Awarding Authority within fourteen (14) calendar days after such conditions are discovered or the claim may be rejected by the Awarding Authority without consideration. The written notice of adjustment shall be used if the actual schedule and costs adjustment cannot be determined at the time of discovering the differing site conditions. The notice shall reserve the party's right to an adjustment. Otherwise, the Contractor waives his/her rights to the claim.

**7.6.2** Upon receipt of such a claim from a Contractor, or upon its own initiative, the Awarding Authority shall make an investigation of such physical conditions, and, if they differ substantially or materially from those shown on the plans or indicated in the Contract Documents or from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the plans and Contract Documents and are of such nature as to cause an increase or decrease in the cost of performance of the work or a change in the construction methods required for the performance of the work which results in an increase or decrease in the cost of the work, the Awarding Authority shall upon submission by the Contractor of a properly submitted Change Order request, make an equitable adjustment in the Contract

Sum and the Contract shall be modified in writing accordingly.

**7.6.3 TIMELY DECISION BY AWARDING AUTHORITY. M.G.L. c.30 §39P**

Whenever this Contract requires the Awarding Authority or its Prime Designer to make a decision during construction of the Project, on interpretation of the specifications, approval of equipment, material or any other approval, or progress of the work, that decision shall be made promptly and, in any event, no later than thirty (30) calendar days after receipt of a written submission for such decision by the Contractor; but if such decision requires extended investigation and study, the Awarding Authority or the Prime Designer shall, within thirty days after the receipt of the submission, give the Contractor written notice of the reasons why the decision cannot be made within the thirty day period and the date by which the decision will be made.

**7.7 CLAIMS**

**7.7.1** If the Contractor has any claim or dispute of any nature arising under this Contract, including a claim based on the Awarding Authority's failure or refusal to approve a change order request of the Contractor, in full or in part, the Contractor shall submit such claim or dispute to the Prime Designer, in the form of a change order request, for initial review and consideration, subject to further appeal to the Administrator. The Contractor must make a written change order request or notification of claim within fourteen (14) calendar days of the event, or the claim may be rejected by the Awarding Authority without consideration. The written notice of claim shall be used if the actual schedule and costs adjustment cannot be determined at the time of event. The notice of claim shall reserve the Contractor's right to an adjustment. If the Contractor is not satisfied with the Prime Designer's decision or, if the Prime Designer fails to render a decision within thirty days after receiving written notice of such claim or dispute from the Contractor, the Contractor may file a written request for a decision with the Awarding Authority's Contract Administrator pursuant to Subparagraph 7.7.2.

**7.7.2** Appeal of the Prime Designer's decision under Subparagraph 7.7.1 must be made directly to Awarding Authority's authorized signatory by certified mail, copy to the Prime Designer and Awarding Authority, within twenty-one (21) calendar days after the date on which the party making the appeal receives the Prime Designer's written decision or within twenty-one (21) days after the thirty (30) day non-decision period noted in 7.7.1. Failure to appeal within this period will result in the Prime Designer's decision becoming final and binding upon the Awarding Authority and the Contractor.

**7.7.3** Pending resolution of the claim or dispute, the Contractor must proceed with the disputed Work, as directed by the Prime Designer. The Contractor must give written notice to the Awarding Authority and the Prime Designer stating that it is proceeding with the disputed work under protest. Accurate records of the nature and extent of the disputed Work and of the time spent and equipment used on the disputed Work shall be maintained by the superintendent and verified daily by the Project Representative, or the Awarding Authority's designee. Failure of the Contractor to maintain such records shall cause the Contractor to forfeit its claim for additional compensation for such disputed work.

**7.7.4** Meetings or administrative conferences held by the EOHLC to review the basis of the claim or dispute are conducted in accordance with the procedure described in the Construction Handbook. Such conferences are not subject to the State Administrative Procedures Act.

**7.7.5** At the conclusion of these proceedings, the EOHLC shall issue a decision that shall be final under the Contract. The matter may then be appealed to a court of competent jurisdiction.

**7.7.6** Requests for administrative conferences by subcontractors must be made by the Contractor; subcontractors cannot make such requests directly.

**ARTICLE 8  
TIME, SCHEDULES, AND COMPLETION**

**8.1 DEFINITIONS**

- 8.1.1** Unless otherwise provided, Contract Time is the performance period, as extended by approved ChangeOrder, allotted in the Contract Documents for Substantial Completion of the Work.
- 8.1.2** The date of commencement of the Work is the date established in the Notice to Proceed from the Awarding Authority. The commencement date shall not be postponed by the failure to act by the Contractor or by persons or entities for whom the Contractor is responsible.
- 8.1.3** The date of Substantial Completion is the date certified by the Prime Designer in accordance with Subparagraph 8.6.7.
- 8.1.4** The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

**8.2. PROGRESS AND COMPLETION**

- 8.2.1** Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Contract, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.
- 8.2.2** The Contractor shall proceed expeditiously with adequate forces and shall achieve Completion within the Contract Time.

**8.3 DELAYS AND EXTENSIONS OF TIME**

- 8.3.1** The Contractor shall be entitled to an extension of time for completion of the Work because of;
- .1** acts of God;
  - .2** labor disputes;
  - .3** abnormal weather conditions; or
  - .4** acts of neglect of the Awarding Authority and the Prime Designer as described in Subparagraph 7.6.3.
- 8.3.1.5** Except in unusual circumstances, delays caused by suppliers, Subcontractors and sub-subcontractors shall be considered within the control of the Contractor.
- 8.3.1.6** Should the Contractor require additional time to complete the Work, the Contractor shall document the reasons therefore and request an extension of time at the time the alleged delay occurs, as provided in this Article and Article 7.
- 8.3.1.7** Failure to notify the Prime Designer of any delay as provided in this Article shall preclude the Contractor from subsequently claiming any damages due to said delay.
- 8.3.1.8** Requests for extensions of time shall be submitted as a change order request to the Prime Designer under Article 7 for the Awarding Authority's consideration.

**8.3.2 CONTRACTOR'S LIABILITY FOR DELAYS**

The Contractor shall be liable for, and shall pay, to the Awarding Authority, all the Awarding Authority's Project related costs incurred after the time stipulated for Substantial Completion, as extended by Change Order. Such costs shall include fees paid to the Prime Designer as extra services for inspection services

and administration of the Contract, at the rate stipulated in the Contract for Design Services between the Awarding Authority and the Prime Designer; the costs of the Project Representative at the current salary rate; lost income based on the average income collected by the Awarding Authority; and any other direct expenses. The Awarding Authority may retain money otherwise due to the Contractor whatever sums accrue to the Awarding Authority pursuant to this provision. The Contractor shall not be liable for the costs for the delay in performance for any period for which an extension of the Contract Time has been granted pursuant to the provisions of Subparagraph 8.3. If the Awarding Authority does not calculate the direct costs for the delay, the Contractor shall be assessed \$500/day for delays resulting from the Contractor's actions.

### 8.3.3 AWARDING AUTHORITY DELAYS

- .1 The Awarding Authority may delay the commencement of the Work, or any part thereof, due to unforeseen circumstances or conditions which have a bearing on the Work required under this Contract or for any other reason if it is deemed to be in the best interest of the Awarding Authority to do so. Except as expressly provided in the following Subparagraphs 8.3.3.2, 8.3.3.3, and 8.3.3.4, the Contractor shall have no claim for additional compensation on account of such delay but shall be entitled to an extension of Contract Time as determined by the Prime Designer.
- .2 The Contractor and the Awarding Authority agree that the following Subparagraphs provide the Contractor with the right to request additional compensation for Awarding Authority caused delays only in the following two circumstances:
  - .1 When the Awarding Authority provides the Contractor with a written order to suspend or delay the Work, or a portion thereof, for a period of fifteen (15) calendar days or more.
  - .2 When the Awarding Authority or its Prime Designer fails to render a decision within the thirty (30) calendar day period described in Subparagraph 7.6.3 and such failure delays the Work, or a portion thereof, for fifteen days or more.
- .3 The Awarding Authority may, for its convenience, order the Contractor in writing to suspend, delay, or interrupt all or any part of the Work for such period of time as it may determine appropriate, provided however, that if there is a suspension, delay, or interruption for fifteen (15) days or more, or there is a failure of the Awarding Authority to act within the time specified in this Contract, the Awarding Authority shall make an adjustment in the Contract Sum for any increase in the cost of performance of this Contract, but shall not include any profit to the Contractor on account of such increase; and provided further, that the Awarding Authority shall not make any adjustment in the Contract Sum under this provision for any suspension, delay, interruption, or failure to act to the extent that such is due to any cause for which this Contract provides for an equitable adjustment of the Contract Sum under any other Contract provisions. M.G.L. c.30 §39O (a).
- .4 The Contractor must submit the amount of a claim under Subparagraph 8.3.3.3 to the Awarding Authority in writing within fourteen (14) calendar days after the end of the suspension, delay, interruption, or failure to act and, in any event, not later than the date of final payment under this Contract and except for costs due to a suspension order, the Awarding Authority shall not approve any costs in the claim incurred more than fourteen (14) calendar days before the Contractor notified the Awarding Authority in writing of the act or failure to act involved in the claim. M.G.L. c.30 §39O (b).
- .5 The Awarding Authority and the Contractor agree that the preceding Subparagraph 8.3.3.4 places a burden on the Contractor to inform the Awarding Authority, whenever the Contractor considers that an action or inaction of the Awarding Authority or its Prime Designer could result or has resulted in a delay in the Project, thereby providing the Awarding Authority with the opportunity to take action to avoid or lessen the time extensions or damages that might be associated with such action or inaction.
- .6 The Contractor must file any claim for additional compensation made pursuant to Subparagraph

8.3.3.4 as a Change Order request. The amount of any such claim shall be calculated only in accordance with the provisions of Subparagraph 7.3.1.3 items a through i and shall be subject to the provisions of Subparagraph 7.3.2.

## **8.4 CONSTRUCTION AND PAYMENT SCHEDULES**

- 8.4.1** Prior to commencement of the Work, the Contractor shall submit to the Prime Designer a construction schedule in bar graph form or other format, satisfactory to the Prime Designer, showing in detail the proposed progress for the construction of the various parts of the Work, the proposed times for receiving materials required, and the interrelationship between the various construction operations and the percentage of completion and the dollar value of the completed work on the first day of each month for each section of the specifications and the entire Work. Submission of said schedule shall be a condition precedent to approval of the Contractor's first application for payment.
- 8.4.2** At the end of each month, or more often if required, the Contractor shall furnish the Prime Designer an updated schedule showing actual progress of the various parts of the Work in comparison with the originally proposed progress and payment schedules. If the Prime Designer raises any objections to progress or payment schedules submitted by the Contractor, the Contractor shall immediately address and resolve such objections to the reasonable satisfaction of the Prime Designer.
- 8.4.3** If the Contractor submits a construction schedule that anticipates Substantial Completion before the date established in the Awarding Authority's Notice to Proceed, the Contractor shall have no claim for additional compensation on account of any delays that prevent Substantial Completion before the date set in said Awarding Authority's Notice to Proceed.

## **8.5 USE AND OCCUPANCY**

- 8.5.1** Prior to the date of Substantial Completion of the entire Project stipulated in the Notice to Proceed, the Awarding Authority shall have the right, from time to time, to occupy and use any portion of the Project as the Work in connection therewith is substantially completed, provided such use and occupancy does not unduly interfere with the Contractor's operations.
- 8.5.2** The Prime Designer will, prior to any such use and occupancy, give fourteen (14) calendar days written notice to the Contractor, indicating the areas intended to be occupied and used, and the intended commencement date of such use and occupancy. Occupancy and use shall not commence prior to a time mutually agreed to by the Awarding Authority and the Contractor.
- 8.5.3** Upon receipt of such notice of intent, the Contractor shall promptly secure and submit to the Prime Designer endorsement from the insurance carrier and the building inspector having jurisdiction over the Work, permitting use and occupancy of the Work, or any designated portion thereof, by the Awarding Authority prior to Substantial Completion of the entire Project. The Contractor shall be permitted to cancel its special perils insurance for that portion of the Project used and/or occupied by the Awarding Authority.
- 8.5.4** Partial or entire use and occupancy by the Awarding Authority shall not constitute an acceptance of Work not completed in accordance with the Contract Documents nor relieve the Contractor from the obligation of performing any Work required by the Contract but not completed at the time of use and occupancy. Before such use and occupancy, the Prime Designer will give the Contractor a list of items to be completed prior to Final Completion occurring in the areas to be occupied.
- 8.5.5** The Contractor shall be relieved of all maintenance costs of the portion of the Project occupied under the provisions of this Article.

- 8.5.6** The Contractor shall not be responsible for wear and tear or damage resulting solely from such use and occupancy.
- 8.5.7** The Contract Sum will be adjusted by mutually acceptable arrangements between the Awarding Authority and the Contractor with respect to heat, electricity, and water furnished by the Contractor to the portion of the Work so occupied.
- 8.5.8** When any portion of the building is in condition to receive fittings, appliances, furniture or other property to be furnished and installed by the Awarding Authority under separate contracts, the Contractor shall allow the Awarding Authority to bring such items into the building and shall provide all reasonable facilities and protection, therefore.

## **8.6 SUBSTANTIAL COMPLETION**

- 8.6.1** Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents and in the opinion of the Prime Designer, so that the Awarding Authority can occupy or utilize the Work for its intended use. In addition, Substantial Completion for the entire Project shall be achieved only when:
- .1** the Awarding Authority has beneficial occupancy and use of the entire Project for all its intended uses;
  - .2** all Project systems included in the Work are operational and acceptable to the Prime Designer;
  - .3** all governmental inspections for the Project have been successfully completed, all governmental approvals and related paperwork have been delivered to the Awarding Authority, and final and unconditional permit sign-off by the authority having jurisdiction and certificates of occupancy (when applicable) for the entire Project have been delivered to the Awarding Authority;
  - .4** the only remaining Work to be performed is minor in nature and the remaining Work may reasonably be performed without having a material adverse effect on or materially interfering with the Awarding Authority's occupancy and use of the Project; and
  - .5** all prerequisites to Substantial Completion defined in the Contract Documents have been completed.
- 8.6.2** When the Contractor considers that the Work, or a portion thereof which the Awarding Authority agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Prime Designer a comprehensive list of items to be completed or corrected. The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such a list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.
- 8.6.3** Upon receipt of the Contractor's list of items to be completed or corrected, the Prime Designer will promptly make a thorough inspection and prepare a "punch list", setting forth in accurate detail any items on the Contractor's list and additional items that are not acceptable or are incomplete.
- 8.6.4** If, after receipt of the Contractor's list, the Prime Designer determines that the Work is not substantially complete, the Prime Designer shall inform the Contractor, in writing within fourteen (14) calendar days of those items that must be completed before the Prime Designer will prepare a punch list. Upon completion of those items, the Contractor shall again request the Prime Designer to prepare the punch list.
- 8.6.5** When the punch list has been prepared, the Contractor will arrange a meeting with the Prime Designer and Subcontractors to identify and explain all punch list items and address questions on the work that must be done before final acceptance.

- 8.6.6** The Prime Designer may revise the punch list, from time to time, to ensure that all items of the Work are properly completed.
- 8.6.7** The Prime Designer will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall establish responsibilities of the Awarding Authority and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate within the provisions of Subparagraph 8.7.2.
- 8.6.8** Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be submitted to the Awarding Authority and Contractor for their written acceptance of responsibilities assigned to them in such Certificate.
- 8.6.9** Partial Payment of retainage shall not be made until at least 45 days after the effective date of the Certificate of Substantial Completion.

## **8.7 FINAL COMPLETION**

- 8.7.1** After the Prime Designer has certified that the Work is substantially complete, the Contractor shall immediately proceed to complete all the remaining items of Work as determined by the Prime Designer, including items authorized by Change Orders, Construction Change Directives or items disputed by the Contractor.
- 8.7.2** The Contractor shall complete all the remaining items of Work described in Subparagraph 8.7.1, as soon as possible, and in any event within twenty-one (21) calendar days after Substantial Completion, unless the Prime Designer determines that a shorter period for completion is appropriate, in which event the Contractor must complete the Contract work within such period. The Prime Designer may extend such twenty-one (21) day period if the Prime Designer determines that such extension is justified. Upon completion of the Work, the Contractor shall notify the Prime Designer in writing that all the Work is complete. Within seven (7) calendar days, the Prime Designer will inspect the Work to determine its completeness. If the Prime Designer determines the Work is complete, then the Prime Designer will prepare a Certificate of Final Completion. Otherwise, the Prime Designer will notify the Contractor in writing of the incomplete Work.
- 8.7.3** If the Contractor fails to complete the remaining items of Work within the period provided in Subparagraph 8.7.2, the Prime Designer will prepare a written monetized punchlist of the outstanding Work to be completed. The Contractor will have seven (7) calendar days to complete the Work or notify the Prime Designer and Awarding Authority in writing why the Work cannot be completed in seven (7) days and include a proposed schedule to complete the Work. If the Contractor fails to comply with this provision, the Awarding Authority may arrange for other contractors to complete such items and the direct and indirect costs of such completion shall be charged against the balance due the Contractor or, if no such balance remains, the Contractor shall pay the Awarding Authority the costs of such completion.
- 8.7.4** As an alternative to the procedure described in Subparagraph 8.7.3, the Awarding Authority may invoke the performance bond of the Contractor and demand that the surety shall complete the remaining items of Work in a timely manner.
- 8.7.5** The Prime Designer will conduct up to two (2) inspections of completed punch list items. The Contractor shall be responsible for the costs of additional inspections required to verify successful completion of the punch list.

## **ARTICLE 9**



## PAYMENTS

### 9.1 CONTRACT SUM

The Contract Sum is stated in the Awarding Authority-Contractor Agreement and, including authorized adjustments, is the total amount payable by the Awarding Authority to the Contractor for performance of the Work under the Contract Documents.

### 9.2 SCHEDULE OF VALUES

**9.2.1** Before the first Application for Payment, the Contractor shall submit to the Prime Designer a Schedule of Values (SOV) allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Prime Designer may require. This schedule, approved by the Prime Designer, shall be used as a basis for reviewing the Contractor's Applications for Payment.

**9.2.2** The Schedule of Values shall contain a separate item for each Section of the Specifications broken down in such form as the Prime Designer may require. Each item in the Schedule of Values shall include its proper share of overhead and profit.

- .1 The Schedule of Values shall be arranged in vertical columns identified with titles, including Line-Item Number, Description of Work, Scheduled Value, Work Completed (From Previous Application and This Period), Materials Presently Stored, Total Completed and Stored to Date, Percentage, Balance to Finish and Retainage (5%). The Schedule of Values shall be updated showing the status of work covered by approved Change Orders. The Schedule of Values may be revised if later found by the Prime Designer to be inaccurate.
- .2 For each line item which has installed value of more than \$20,000, breakdown the costs to list major products, components, labor, or operations under each line.
- .3 The sum of costs of all items listed in the Schedule of Values shall be equal to the total Contract Sum.
- .4 Work Covered in Division 1: Itemize separate line-item cost for each of the following general cost items (if applicable):
  - a. Insurance.
  - b. Performance and Payment Bonds.
  - c. Supervision and Project Management.
  - d. Submittals Preparation.
  - e. Protection.
  - f. Temporary facilities.
  - g. Project sign.
  - h. Construction waste management.
  - i. Final cleaning.
  - j. Punchlist and Close-out Documents.
  - k. Commissioning activities (if applicable).
  - l. Other items of Work as requested by the Prime Designer or Awarding Authority.

### 9.3 APPLICATIONS FOR PAYMENT

**9.3.1** Once each month, on a date established at the beginning of the Work, the Contractor shall deliver to the Prime Designer electronically or in hard copy format, an itemized Application for Payment, supported by such data substantiating the Contractor's right to payment as the Prime Designer may require, and reflecting retainage as provided in Subparagraph 9.6.1. Such Application for Payment shall be submitted on a form available from the Awarding Authority. The form shall show separately:

- .1 The value of labor and materials incorporated in the Work.
- .2 The value, kind, and quantity of each item of material or equipment not incorporated in the Work but delivered and suitably stored at the site, during the current pay period.

- .3 The value, kind, and quantity of each item of material or equipment not incorporated in the Work but suitably stored at another location agreed upon in writing, during the current pay period.
- .4 All Change Orders approved up to the date of the Application for Payment.
- .5 The amounts approved for payment for each item on previous applications.

#### **9.4 PAYMENT FOR STORED MATERIALS**

- 9.4.1** The Contractor shall include in such Application for Payment only such materials as are incorporated in the Work. Except however, the Contractor may include the value of materials or equipment delivered at the site of the Work (or at some location within Massachusetts agreed to in writing) upon delivery to the Awarding Authority of:
- .1 an acceptable Transfer of Title; and
  - .2 receipted invoices or other acceptable proof of prior payment by the Contractor for such materials; and
  - .3 a stored materials insurance binder (see subparagraph 14.5.2) that covers the materials for which payment is requested, that name of the Awarding Authority as an insured party should the stored materials be subjected to any casualty, loss, or theft prior to their inclusion in the Work.
- 9.4.2** This material(s) or equipment must, in the judgment of the Prime Designer:
- .1 meet the requirements of the Contract, including prior shop drawing, product data, and sample approval; and
  - .2 be ready for use; and
  - .3 be properly stored by the Contractor and adequately protected until incorporated into the Work.
- 9.4.3** Failure to comply with subparagraphs 9.4.1 and 9.4.2 may result in Certificates being changed in accordance with M.G.L. c.30 §39K.

#### **9.5. CERTIFICATES FOR PAYMENT**

- 9.5.1** The Prime Designer shall mark the date of receipt on the Contractor's Application for Payment. The Prime Designer will, within seven (7) days after receipt of the Contractor's Application for Payment either,
- .1 issue to the Awarding Authority a Certificate for Payment, with a copy to the Contractor, for such amount as the Prime Designer determines is properly due, or
  - .2 return the application to the Contractor if it is not in proper form or contains computations not arithmetically correct; or
  - .3 make changes to the application as provided in subparagraph 9.5.2.
- 9.5.2** The Prime Designer shall notify the Contractor and Awarding Authority in writing of the Prime Designer's reasons for withholding certification in whole or in part as provided in subparagraphs 9.6.1.2 and 9.6.1.3.
- 9.5.3** The Awarding Authority may make changes to any Application for Payment submitted by the Contractor in accordance with M.G.L. c.30 §39K, and the payment due on said Application for Payments shall be computed in accordance with the changes so made. The provisions of said Section 39K shall govern payments pursuant to Applications for Payment on which the Awarding Authority has made changes.
- 9.5.4** No certificate of payment nor any progress payment shall constitute acceptance of Work not in accordance with the Contract Documents.

#### **9.6 STATUTORY PAYMENT PROVISIONS**

- 9.6.1** After the Prime Designer has issued a Certificate for Payment the Awarding Authority shall make payment to the Contractor in accordance with M.G.L. c.30 §39K and as amended which provides as follows:
- .1** Within 30 days after receipt from the Contractor, at the place designated by the Awarding Authority if such a place is so designated, of a periodic estimate requesting payment of the amount due for the preceding month, the Awarding Authority will make a periodic payment to the Contractor for the Work performed during the preceding month and for the materials not incorporated in the Work but delivered and suitably stored at the site (or at some location agreed upon in writing) to which the Contractor has title or to which a Subcontractor has title and has authorized the Contractor to transfer title to the Awarding Authority, less (1) a retention based on its estimate of the fair value of its claims against the Contractor and less (2) a retention for direct payments to Subcontractors based on demands for same in accordance with the provisions of Section 39F, and less (3) a retention not exceeding five percent (5%) of the approved amount of the periodic payment.
  - .2** After the receipt of a periodic estimate requesting final payment and within 65 days after (a) the Contractor fully completes the Work or substantially completes the work so that the value of the Work remaining to be done is, in the estimate of the Awarding Authority, less than one percent (1%) of the original Contract Sum, or (b) the Contractor substantially completes the Work and the Awarding Authority takes possession for occupancy, whichever occurs first, the Awarding Authority shall pay the Contractor the entire balance due on the Contract less, (1) a retention based on its estimate of the fair value of its claims against the Contractor and of the cost of completing the incomplete and unsatisfactory items of Work less (2) a retention for direct payments to Subcontractors based on demands for same in accordance with the provisions of Section 39F, or based on the record of payments by the Contractor to the Subcontractors under this Contract if such record of payment indicates that the Contractor has not paid Subcontractors as provided in Section 39F.
  - .3** If the Awarding Authority fails to make payment as herein provided, there shall be added to each such payment daily interest at the rate of three percentage points above the rediscount rate then charged by the Federal Reserve Bank of Boston commencing on the first day after said payment is due and continuing until the payment is delivered or mailed to the Contractor; provided, that no interest shall be due, in any event, on the amount due on a periodic estimate for final payment until forty-five days after receipt of such a periodic estimate from the Contractor, at the place designated by the Awarding Authority if such a place is so designated. The Contractor agrees to pay to each Subcontractor a portion of any such interest paid in accordance with the amount due each Subcontractor.

**9.6.2 DIRECT PAYMENT TO SUBCONTRACTORS – NOT USED**

**9.7 FINAL PAYMENT**

- 9.7.1** Upon final acceptance of the Work, the Contractor shall be entitled to payment of the Contract balance, in accordance with Subparagraph 9.6.1.2 and per the process described in Division 1 of the Specifications.
- 9.7.2** The acceptance by the Contractor of the last payment due under this Contract or the execution of the Final Certificate of Completion, shall operate as a release to the Awarding Authority and the Prime Designer from all claims and liability related to this Contract.

**9.8 PAYMENT LIABILITIES OF CONTRACTOR**

- 9.8.1** The Contractor shall be responsible to the Awarding Authority for all expenses, losses, and damages incurred in consequence of any defect, omission, or mistake of the Contractor or any of its employees, Subcontractors, or suppliers.
- 9.8.2** The Awarding Authority may retain any moneys which would otherwise be payable under this Contract and apply the same, or so much as may be necessary therefore, to the payment of any expenses, losses, or damages incurred by the Awarding Authority as a direct result of the Contractor's failure to perform its obligations hereunder.

## **ARTICLE 10 GUARANTEES AND WARRANTIES**

### **10.1 GENERAL GUARANTY**

If at any time during the period of one (1) year from the date of Substantial Completion as defined in Paragraph 8.6, any part of the Work shall, in the reasonable determination of the Prime Designer or Awarding Authority, require replacing or repairing due to the fact that it is broken, defective, or otherwise does not conform to the Contract Documents, the Awarding Authority will notify the Contractor to make the required repairs or replacement.

**10.1.1** The warranty period on mechanical and electrical systems and equipment shall commence on the date of sign-off by the commissioning agent when a commissioning agent is required on the Project. The warranty period shall be one (1) year from the date of sign-off unless otherwise adjusted by the Contract. The warranty period for the mechanical and electrical Work may differ from the warranty period for the general Work established by Substantial Completion date.

**10.1.2** If the Contractor shall neglect to commence such repairs or replacement to the satisfaction of the Awarding Authority within ten (10) calendar days from the date of giving or mailing such notice, then the Awarding Authority may employ other persons to make the same.

**10.1.3** The Contractor agrees, upon demand, to pay to the Awarding Authority all amounts that the Awarding Authority expends for such repairs or replacements.

**10.1.4** During this one-year guarantee period any corrective work shall be performed in accordance with the applicable terms of this Contract. For items of work completed after use and occupancy has been taken, the one-year guarantee shall commence at the time the Awarding Authority accepts such items.

**10.1.5** This one-year guarantee shall not limit any express guaranty or warranty provided elsewhere in the Contract.

### **10.2 SPECIAL GUARANTEES AND WARRANTIES**

**10.2.1** Guarantees and warranties required in the various sections of the Specifications must be delivered to the Prime Designer before final payment to the Contractor may be made, or in the case of guarantees and warranties which originate with a Subcontractor's section of the Work, before final payment for the amount of that subtrade or for the phase of Work to which the guarantee or warranty relates.

**10.2.2** The failure to deliver the required guarantee or warranty shall constitute a failure to fully complete the Work in accordance with the Contract Documents.

**10.2.3** The Contractor's obligation to correct Work as set forth in Paragraph 3.12 is in addition to, and not in substitution of, such guarantees or warranties as may be required in the various Sections of the Specifications.

## **ARTICLE 11 MISCELLANEOUS LEGAL REQUIREMENTS**

### **11.1 GENERAL**

The Contractor shall stay fully informed of all existing and future state and national laws and municipal ordinances and regulations in any manner affecting those engaged or employed in the Work, or the materials

used or employed in the work, or in any way affecting the conduct of the Work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the Contract Work. All provisions of law that apply to this Contract are hereby made a part of this Contract. If any discrepancy or inconsistency is discovered in the Contract Documents in relation to any such law, ordinance, regulation, order or decree, the Contractor shall forthwith report the same to the Awarding Authority in writing.

- 11.1.1** The Contractor shall cause all its agents and employees to observe and comply with all such existing and future laws, ordinances, regulations, orders, and decrees.
- 11.1.2** The General Conditions and the Contract shall be governed by the laws of the Commonwealth of Massachusetts. The venue and jurisdiction of any action will only be brought in the Courts of the Commonwealth of Massachusetts.
- 11.1.3** These General Conditions and the Contract shall inure to the benefit of, and be binding upon, the successors and assigns of each of the parties hereto.
- 11.1.4** In the event that any provision of the General Conditions shall be deemed invalid, unreasonable, or unenforceable by any court of competent jurisdiction, such provision shall be stricken from the General Conditions or modified so as to render it reasonable, and the remaining provisions of the General Conditions or the modified provision as provided above, shall continue in full force and effect and be binding upon the parties so long as such remaining or modified provisions reflect the intent of the parties as of the date of the General Conditions and the Awarding Authority / Contractor Agreement. Further, should the General Conditions omit any statutory or regulatory requirements which would otherwise render the General Conditions illegal, then the General Conditions shall be deemed amended to the minimum extent necessary to comply with said statutes or regulations.
- 11.1.5** The parties agree that all documents created for the project by the Contractor shall belong to the Awarding Authority.

## **11.2 CORPORATE DISCLOSURES**

The Contractor, if a foreign corporation, shall comply with M.G.L. c.181 §3 and §5, and M.G.L. c.30 §39L.

## **11.3 VETERANS PREFERENCE**

In the employment of mechanics and apprentices, teamsters, chauffeurs, and laborers in the construction of public works in the Commonwealth, preference shall first be given to citizens of the Commonwealth who have been residents of the Commonwealth for at least six months at the commencement of their employment and who are veterans as defined M.G.L. c.4 §7 (34), and who are qualified to perform the work to which the employment relates; and secondly, to citizens of the Commonwealth generally who have been residents of the Commonwealth for at least six months at the commencement of their employment, and if they cannot be obtained in sufficient numbers, then to citizens of the United States.

## **11.4 PREVAILING WAGE RATES**

The Director of the Department of Labor and Workforce Development has established the Schedule found in Division One of the Specifications, listing the prevailing minimum wage rates that must be paid to all workers employed on the Contract. Such Schedule shall continue to be the minimum rate of wages payable to workers on this Contract throughout the term of the Contract. The Contractor shall not have any claim for extra compensation from the Awarding Authority if the actual wages paid to employees in the Contract exceeds the rates listed on the Schedule. The Contractor shall cause a copy of said Schedule to be kept in a conspicuous place at the Project site during the term of the Contract. (See M.G.L. c.149 §26-27H.) If reserve police officers are employed by the Contractor, they shall be paid the prevailing wage of regular police officers. (See M.G.L. c.149 §34B).

- 11.4.1** The Contractor shall comply with and shall cause its Subcontractors to comply with MGL. c. 149 §

148 which requires the weekly or biweekly payment of employees within six days of the end of the pay period during which wages were earned if employed for five or six days of a calendar week, and within other periods of time under certain circumstances as set forth therein.

### **11.5 VEHICLE AND EQUIPMENT OPERATORS**

If the Director of the Department of Labor and Workforce Development has established a Schedule of wage rates to be paid to the operators of trucks, vehicles or equipment for this Project, the Contractor shall be obligated to pay such operators at least the minimum wage rate contained on such Schedule. (See M.G.L. c.149 §26-27H).

### **11.6 EIGHT HOUR DAY AND LODGING**

**11.6.1** The Contractor shall comply with MGL c. 149 § 30, 34 and 34A which provide that no laborer, workman, mechanic, foreman or inspector working in the employment of the Contractor, Subcontractor or other person doing or contracting to do the whole or part of the Work, shall be required or permitted to work any more than eight hours in any one day, or more than 48 hours in any one week, or more than six days in any one week, except in cases of emergency.

**11.6.2** The Contractor shall comply with, and shall cause its Subcontractors to comply with, MGL c. 149 § 25 which provides that every employee on the Work shall lodge, board, and trade where and with whom he/she elects, and the Contractor and any Subcontractor shall not directly or indirectly require, as a condition of employment, that an employee lodge, board, or trade at a particular place or with a particular person.

### **11.7 EXECUTIVE ORDERS**

The Contractor shall comply with the provisions of M.G.L. c.151B; Executive Order No. 227, Governor's Code of Fair Practices, Executive Order No. 237 pertaining to minority and women business development; Executive Order No. 246 pertaining to the handicapped and all regulations promulgated pursuant thereto. The aforementioned law, Executive Orders, and regulations are incorporated herein by reference and made a part of this Contract.

### **11.8 CONFLICT OF INTEREST.**

The Contractor covenants, that (1) presently, there is no financial interest and shall not acquire any such interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement or which would violate M.G.L. c.268A, as amended; (2) in the performance of this Contract, no person having any such interest shall be employed by the Contractor or engaged as a subcontractor by the contractor; and (3) no partner or employee of the firm is related by blood or marriage to any Board Member or employee of the Awarding Authority.

## **ARTICLE 12 CONTRACTOR'S ACCOUNTING REQUIREMENTS**

### **12.1 DEFINITIONS**

The words defined herein shall have the meaning stated below whenever they appear in this Article 12.

**12.1.1** "Contractor" means any person, corporation, partnership, joint venture, sole proprietorship, or other entity awarded this Contract.

**12.1.2** "Contract" means any contract awarded or executed pursuant to M.G.L. c.30 §39M or M.G.L. c.149 §44A-J, which is for an amount greater than one hundred thousand dollars (\$100,000).

**12.1.3** "Records" means books of original entry, accounts, checks, bank statements and all other

banking documents, correspondence, memoranda, invoices, computer printouts, tapes, discs, papers and other documents or transcribed information of any type, whether expressed in ordinary or machine language.

- 12.1.4** "Independent Certified Public Accountant" means a person duly registered in good standing and entitled to practice as a certified public accountant under the laws of the place of his/her residence or principal office and who is in fact independent.
- 12.1.5** "Audit," when used regarding financial statements, means an examination of records by an independent certified public accountant in accordance with generally accepted accounting principles and auditing standards for the purpose of expressing a certified opinion thereon, or, in the alternative, a qualified opinion or a declination to express an opinion for stated reasons.
- 12.1.6** "Accountant's Report," when used regarding financial statements, means a document in which an independent certified public accountant indicates the scope of the audit which he/she has made and sets forth his/her opinion regarding the financial statements taken as a whole with a listing of noted exceptions and qualifications, or an assertion to the effect that an overall opinion cannot be expressed. When an overall opinion cannot be expressed the reason therefore shall be stated. An accountant's report shall include a signed statement by the responsible corporate officer attesting that management has fully disclosed all material facts to the independent certified public accountant, and that the audited financial statement is a true and complete statement of the financial condition of the Contractor.
- 12.1.7** "Management," when used herein, means the chief executive officers, partners, principals or other person or persons primarily responsible for the financial and operational policies and practices of the Contractor.
- 12.1.8** Accounting terms, unless otherwise defined herein shall mean, in accordance with generally accepted accounting principles and auditing standards.

## **12.2 RECORD KEEPING**

- 12.2.1** The Contractor shall make and keep for at least six (6) years after final payment, books, records, and accounts that in reasonable detail accurately and fairly reflect the transactions and dispositions of the Contractor.
- 12.2.2** Until the expiration of six (6) years after final payment, the Inspector General and the Awarding Authority shall have the right to examine any books, documents, papers or records of the Contractor and Subcontractors that directly pertain to and involve transactions relating to the Contractor and Subcontractors.
- 12.2.3** The Contractor shall describe any change in the method of maintaining records or recording transactions which materially affects any statements filed with the Awarding Authority including the date of the change and reasons therefore and shall accompany said description with a letter from the Contractor's independent certified public accountant approving or otherwise commenting on the changes.
- 12.2.4** Prior to the execution of the Contract, the Contractor shall file a statement of management on internal accounting controls as set forth in Paragraph 12.3 below.
- 12.2.5** Prior to the execution of the Contract, the Contractor shall file an audited financial statement for the most recent completed fiscal year as set forth in Paragraph 12.4 below and will continue to file such statement annually during the term of the Contract.

## 12.3 STATEMENT OF MANAGEMENT CONTROLS

**12.3.1** Prior to execution of the Contract, the Contractor shall file with the Awarding Authority a statement of management as to whether the system of internal accounting controls of the Contractor and its subsidiaries reasonably assures that:

- .1 transactions are executed in accordance with management's general and specific authorization;
- .2 transactions are recorded as necessary to:
  - a. to permit preparation of financial statements in conformity with generally accepted accounting principles, and
  - b. to maintain accountability for assets;
- .3 access to assets is permitted only in accordance with management's general or specific authorization; and
- .4 the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action was taken with respect to any difference.

**12.3.2** Prior to execution of the Contract, the Contractor shall also file with the Awarding Authority a statement prepared and signed by an independent certified public accountant, stating that the accountant has examined the statement of management on internal accounting controls, and expressing an opinion as to:

- .1 whether the representations of management in response to subparagraph 12.3.1 above are consistent with the results of management's evaluation of the system of internal accounting controls; and
- .2 whether such representations of management are reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the applicant's financial statement.

## 12.4 ANNUAL FINANCIAL STATEMENT

Every Contractor awarded a contract shall annually file with the Awarding Authority during the term of the Contract a financial statement prepared by an independent certified public accountant based on an audit by such accountant. The final statement filed shall include the date of final payment. All statements shall be accompanied by an accountant's report.

## ARTICLE 13 EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS

### 13.1 REQUIREMENTS

The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, age, handicap, or sex. The aforesaid provision shall include, but not be limited to, the following employment upgrading, demotion, or transfer; recruitment advertising; recruitment layoff; termination; rates of pay or other forms of compensation; conditions or privileges of employment; and selection for apprenticeship.

### 13.2 CONDITIONS

The Contractor must provide information as is necessary, in the judgment of the Awarding Authority or the EOHLA, to ascertain compliance with the terms of Specification Section 00 73 36.

## ARTICLE 14 INSURANCE

### 14.1 INSURANCE REQUIREMENTS

**14.1.1** The Contractor shall take out and maintain insurance coverage as listed in subparagraphs 14.2 - 14.8 with respect to the operations as well as the completed operations of this Contract. This



insuranceshall be provided at the Contractor's expense and shall be in full force and effect for the full term of the Contract.

**14.1.2** All policies shall be issued by companies authorized to write that type of insurance under the laws of the Commonwealth of Massachusetts.

**14.2 CONTRACTOR'S COMMERCIAL GENERAL LIABILITY**

**14.2.1** The Contractor shall provide to the Awarding Authority the "Commercial General Liability" policy form CG0001 or the exact equivalent with respect to the operations performed by any employee, Subcontractor, or supplier with limits of no less than:

Each Occurrence	\$1,000,000
General Aggregate	\$2,000,000 per project
Products-Completed Operations Aggregate	\$2,000,000
Personal Injury & Advertising Injury	\$1,000,000
Damages to Premises Rented by You	\$50,000
Not Specified Medical Expenses	\$5,000

Umbrella coverage:

Each Occurrence	\$5,000,000
General Aggregate	\$5,000,000
Products-Completed Operations Aggregate	\$5,000,000

**14.2.2** The completed operations coverage shall be maintained for a period of two (2) years after Substantial Completion as defined in subparagraph 8.6.1. The Contractor shall provide renewal certificates of insurance to the Awarding Authority as evidence that this coverage is being maintained. This policy shall include the Awarding Authority and anyone else requested by the Awarding Authority as an additional insured for ongoing and completed operations. This policy shall be primary and non-contributory with respect to any other insurance available to the additional insured. This policy shall include a Waiver of Subrogation in favor of the Awarding Authority.

**14.3 VEHICLE LIABILITY**

The Contractor shall provide automobile liability coverage for owned, non-owned, and hired autos using ISO Business Auto Coverage form CA0001 or the exact equivalent. If the Contractor owns no vehicles, this requirement may be met through a non-owned endorsement to the Commercial General.

Liability: Bodily Injury	\$ 1,000,000. each person \$ 1,000,000. each accident
Property Damage.	\$ 1,000,000. each accident
	or
	\$1,000,000 Combined Single Limit

**14.4 WORKER'S COMPENSATION**

The Contractor shall provide the following coverage.

Workers' Compensation: Coverage A	Per G.L. c149 §34 and c152, as amended.
Employer's liability: Coverage B	\$500,000 Bodily Injury by Accident each accident
	\$500,000 Bodily Injury by Disease each employee
	\$500,000 Bodily Injury by Disease policy limit

**14.5 CONTRACTOR'S POLLUTION LIABILITY**

The policy shall:

- .1 be written on a "true" occurrence basis without any "sunset" clause;
- .2 have the pollution exclusion amended to add back coverage for all pollution claims;
- .3 include separate products and completed operations coverage, which shall be maintained for (2) years after Substantial Completion, as defined by G.L 30 §39G; and
- .4 provide the following limits of insurance:

Each occurrence	\$1,000,000
General Aggregate	\$2,000,000
Products-Completed Operations Aggregate	\$2,000,000
Personal Injury & Advertising Injury	\$1,000,000
Damage to Premises Rented by You	\$50,000
Medical Expense	\$5,000

**14.6 PROPERTY COVERAGE**

- 14.6.1** Provide Builder's Risk (Special Perils) coverage against loss or damage by fire and against loss or damage covered by the special perils insurance endorsement on all Work included in this Contract in an amount equal to at least 80% of Contract Amount.
- 14.6.2** When work will be completed on existing buildings owned by the Awarding Authority, the Contractor shall provide an installation floater, in the full amount of the Contract, for the requirements set forth in Subparagraph 14.6.
- 14.6.3** This policy and/or installation floater shall indicate if Stored Materials coverage is provided as required by Paragraph 9.4.
- 14.6.4** The policy or policies shall specifically state that they are for the benefit of and payable to the Awarding Authority, the Contractor, and all persons furnishing labor or labor and materials for the Contract Work, as their interests may appear.
- 14.6.5** The Builder's Risk (Special Perils) coverage shall include any costs for work performed by the Prime Designer or any consultant as the result of a loss experienced during the life of this Contract.

**14.7 AWARDING AUTHORITY AS ADDITIONAL INSURED**

The Awarding Authority and the EOHLC shall be named as additional insured on the Contractor's Commercial Liability Policies.

**14.8 CERTIFICATES OF INSURANCE, POLICIES**

- 14.8.1** Certificates of insurance, acceptable to the Awarding Authority, shall be submitted to the Awarding Authority simultaneously with the execution of the Contract. Certificates shall indicate that the contractualliability coverage, and Awarding Authority's and Contractor's Protective Liability coverage is in force, as well as the deletions of the XCU exclusions.
- 14.8.2** The Contractor shall file the original and one certified copy of all policies with the Awarding Authority and one with the Awarding Authority within sixty (60) calendar days after Contract award. If the Awarding Authority is damaged by the Contractor's failure to maintain such insurance and to so notify the Awarding Authority, then the Contractor shall be responsible for all reasonable costs attributable thereto.

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#### **14.9 CANCELLATION**

Cancellation of any insurance required by this Contract, whether by the insurer or the insured, shall not be valid unless written notice thereof is given by the party proposing cancellation to the other party and Awarding Authority at least ten (10) calendar days prior to the effective date thereof, which shall be expressed in said notice.

### **ARTICLE 15 INDEMNIFICATION**

#### **15.1 INDEMNIFICATION**

**15.1.1** The Contractor shall take all responsibility for the Work and take all precautions for preventing injuries to persons and property in or about the Work; shall bear all losses resulting from or on account of the amount or character of the Work. The Contractor shall pay or cause payment to be made for all labor performed or furnished and for all materials used or employed in conducting this Contract. The Contractor shall assume the defense of, and indemnify and save harmless, the Prime Designer, the Awarding Authority, the EOHLC and their officers and agents from all claims relating to: labor performed or furnished and materials used or employed for the Work; inventions, patents and patent rights used in and in doing the Work unless such patent infringement is due to a product or process specified by the Awarding Authority; injuries to any person or corporation received or sustained by or from the Contractor and any employees, and Subcontractors and employees, in doing the work, or in consequence of any improper materials, implements or labor used or employed therein; and any act, omission, or neglect of the Contractor and any employees.

### **ARTICLE 16 PERFORMANCE AND PAYMENT BONDS**

#### **16.1 CONTRACTOR BONDS**

**16.1.1** For Contracts exceeding \$25,000, the Contractor shall provide the Awarding Authority with 100% performance and payment (labor and materials) bonds in the form provided by the Awarding Authority (Forms 00.61.01 and 00.61.02), executed by a surety licensed by the Commonwealth's Division of Insurance. Each such bond shall be in the amount of the Contract Sum.

**16.1.2** If at any time prior to final payment to the Contractor, the Surety:

- .1** is adjudged bankrupt or has made a general assignment for the benefit of its creditors;
- .2** has liquidated all assets and has made a general assignment for the benefit of its creditors;
- .3** is placed in receivership;
- .4** otherwise petitions a state or federal court for protection from its creditors; or
- .5** allows its license to do business in Massachusetts to lapse or be revoked; the Contractor shall, within twenty-one (21) calendar days of any such action listed above, provide the Awarding Authority with new performance and payment bonds as described in Paragraph 16.1.1. Such bonds shall be provided solely at the Contractor's expense.

### **ARTICLE 17 TERMINATION**

#### **17.1 TERMINATION FOR CAUSE**

**17.1.1** The Awarding Authority may terminate this Contract for cause if it determines that any of the following circumstances have occurred:

- .1** The Contractor is adjudged bankrupt or has made a general assignment for the benefit of its

- creditors;
- .2 A receiver has been appointed of the Contractor's property;
- .3 All or a part of the Work has been abandoned;
- .4 The Contractor has sublet or assigned all or any portion of the Work, the Contract, or claims thereunder, without the prior written consent of the Awarding Authority, except as provided in the Contract;
- .5 The Prime Designer has determined that the rate of progress required on the project is not being met, or
- .6 The Contractor has substantially violated any provisions of this Contract.

**17.1.2** In the event of such termination, the Awarding Authority may hold the Contractor and its sureties liable in damages as for a breach of contract, or the Awarding Authority may notify the Contractor to discontinue all Work, or any part thereof, and the Contractor shall discontinue all Work, or any part thereof, as the Awarding Authority may designate.

**17.1.3** The Awarding Authority may complete the Work, or any part thereof, and charge the expense of completing the Work or part thereof, to the Contractor.

**17.1.4** The Awarding Authority may take possession of and use any materials, machinery, implements, and tools found upon the site of said Work. The Awarding Authority shall not be liable for any depreciation, loss, or damage to said materials, machinery, implements or tools during said use and the Contractor shall be solely responsible for their removal from the Project site after the Awarding Authority has no further use for them.

**17.1.5** The Awarding Authority may, at its option, require the surety or sureties to complete the Contract.

## **17.2 TERMINATION LIABILITIES**

**17.2.1** All expenses charged under Paragraph 17.1 shall be deducted and paid by the Awarding Authority out of any moneys then due or to become due the Contractor under this Contract; and in such accounting the Awarding Authority shall not be held to obtain the lowest figures, by competitive bid or otherwise, for the completion of the Work or any part thereof.

**17.2.2** All sums actually paid by the Awarding Authority to complete the Work shall be charged to the Contractor. In case the expenses charged are less than the sum which would have been payable under this Contract if the same had been completed by the Contractor, the Contractor shall be entitled to receive the difference. In case such expenses shall exceed the said sum, the Contractor shall pay the amount of the excess to the Awarding Authority.

**17.2.3** Expenses incurred under subparagraph 17.1 shall also include, but not be limited to, costs for Prime Designer's extra services and Project Representative services required, in the opinion of the Awarding Authority, to successfully inspect and administer the construction contract through final completion, as described in Paragraph 8.7.

## **17.3 TERMINATION - NO FAULT**

**17.3.1** If this Contract is terminated by the Awarding Authority, and termination is not based on a reason listed in Paragraph 17.1, the Contractor shall be compensated for its costs incurred on the Project, including reasonable costs of de-mobilization, calculated on a percent completion basis as provided in Article 9, covering the period between the last periodic payment and the date of termination.

**17.3.2** Payment by the Awarding Authority pursuant to Subparagraph 17.3.1 shall be considered to fully compensate the Contractor for all claims and expenses and those of any consultants,

Subcontractors, and suppliers, directly or indirectly attributable to the termination, including any claims for lost profits.

**17.4 ADMINISTRATOR'S APPROVAL**

Termination of the Contract requires the prior approval of the Awarding Authority's authorized signatory.

END OF GENERAL CONDITIONS

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Section 00 73 36  
EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS

1.01 DEFINITIONS

- A. The following additional definitions shall apply to this Section.
- B. "Minority" means a person who meets one or more of the following definitions:
1. American Indian or Native American means: all persons having origins in any of the original peoples of North America and who are recognized as an Indian by a tribe or tribal organization.
  2. Asian means: All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian sub-continent, or the Pacific Islands, including, but not limited to China, Japan, Korea, Samoa, India, and the Philippine Islands.
  3. Black means: All persons having origins in any of the Black racial groups of Africa, including, but not limited to, African Americans, and all persons having origins in any of the original peoples of the Cape Verdean Islands.
  4. Eskimo or Aleut means: All persons having origins in any of the peoples of Northern Canada, Greenland, Alaska, and Eastern Siberia.
  5. Hispanic means: All persons having their origins in any of the Spanish-speaking peoples of Mexico, Puerto Rico, Cuba, Central or South America, or the Caribbean Islands.
- C. "Commission" or "MCAD" means the Massachusetts Commission Against Discrimination.
- D. "E.E.O. Officer" or Equal Employment Opportunity Officer means those persons designated by the Contractor, the Awarding Authority, or any other agency or party having jurisdiction under this contract, that serve in their capacity to implement this Section.

1.02 CONDITIONS

- A. The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, age, handicap, or sex. The previously mentioned provision shall include, but not be limited to, the following: employment upgrading, demotion or transfer; recruitment advertising; recruitment layoff; termination; rates of pay or other forms of compensation; conditions or privileges of employment; and selection for apprenticeship.

- B. The Contractor shall post notices provided by the Commission, in conspicuous places, setting forth the provisions of the Fair Employment Practices Law of the Commonwealth.
- C. The Contractor shall undertake in good faith affirmative action measures designed to eliminate any discriminatory barriers in the terms and conditions of employment on the grounds of race, color, religious creed, national origin, age, handicap, or sex, and to eliminate and remedy any effects of such discrimination in the past. Such affirmative action shall entail positive and aggressive measures to ensure equal opportunity in the areas of hiring, upgrading, demotion or transfer, recruitment, layoff or termination, rate of compensation, and in-service or apprenticeship training programs. This affirmative action shall include all action required to guarantee equal employment opportunity for all persons, regardless of race, color, religious creed, national origin, age, or sex.
- D. The Contractor shall not discriminate on grounds of race, color, religious creed, national origin, age, or sex in employment practices, in the selection or retention of Subcontractors, or in the procurement of materials and rentals of equipment.
- E. The Commission and a designee of the Awarding Authority shall have access to the construction site and all applicable records of the Contractor and Subcontractors.
- F. The Contractor's EEO Certificate must be signed by the low general, and all filed sub-bidders as a condition of Contract validation by the EOHLIC.

### 1.03 MINORITY GOAL / MINIMUM MINORITY PRECENTAGES

- A. Pursuant to his/her obligations under the preceding section, the Contractor shall strive to achieve on this project the labor participation goals contained herein.
- B. The participation goals for this project shall be 15.3% for minorities and 6.9% for women.
- C. The participation goals, as set forth herein, shall not be construed as quotas or set asides; rather, such participation goals will be used to measure the progress of the Commonwealth's equal opportunity, non-discrimination, and affirmative action program. Additionally, the participation goals contained herein should not be seen or treated as a floor or as a ceiling for the employment of particular individuals or a group of individuals.



- D. Such job categories shall include but not be limited to those "Classes of Work" enumerated in M.G.L. c.149 §44F and for trades covered by Item 1 of the Contractor's bid.
- E. These percentages shall apply to the Contractor and to all Subcontractors, regardless of tier, for all on-site Work.

#### 1.04 REFERRALS

- A. In the hiring of minority journeymen, apprentices, trainees and advanced trainees, the Contractor shall rely on referrals from a multi-employer affirmative action program approved by the EOHLC or the Commission; and traditional referral methods utilized by the construction industry, where such referrals are needed to meet minority hiring requirements. The Contractor shall keep accurate records of such requests for referrals.
- B. Records of employment referral orders, prepared by the Contractor, shall be made available to the Awarding Authority and to the EOHLC upon request.

#### 1.05 EEO WORK FORCE REPORTING PROCEDURES

- A. The Contractor shall provide the following information to the Awarding Authority on copies of the forms found at the end of this Section.
  - 1. **Weekly Manpower Reports 00 73 36.03:** The Contractor shall prepare a report after each week of activity, reflecting the actual working hours of all personnel identified as minority or non-minority.
    - a. This report shall be received by the Awarding Authority no later than the Friday following the week reported.
    - b. Failure to provide information shall result in sanctions as provided in this section.

#### 1.06 COMPLIANCE – REPORTS AND INFORMATION

- A. The Contractor shall provide all information and reports required by the Awarding Authority or the EOHLC and will permit access to its facilities and to any books, records, accounts, and other sources of information which may be determined by the Awarding Authority or the EOHLC to affect the employment of personnel. Where information required is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the Awarding Authority or the EOHLC as appropriate and shall set forth what efforts have been made to obtain the information.

## 1.07 COMPLIANCE – INVESTIGATIONS

- A. Whenever the Awarding Authority's EEO Officer, the MCAD, or the EOHLIC believes the Contractor may not be operating in compliance with the terms of these requirements, the EOHLIC shall investigate and may confer with the parties, to verify such allegations. The EOHLIC shall not initiate an investigation without prior notice to the Contractor.
- B. If the EOHLIC finds the Contractor in non-compliance, it shall make a preliminary report, and notify the Contractor in writing of the steps necessary to bring such Contractor into compliance. A copy of this report shall be sent to the EOHLIC's Affirmative Action Officer.

## 1.08 COMPLIANCE – EOHLIC – AFFIRMATIVE ACTION INVESTIGATION

- A. If the Contractor fails or refuses to fully perform the steps necessary to achieve compliance, the EOHLIC shall make a report of non-compliance to the EOHLIC's Affirmative Action Officer, who will then investigate.
- B. Should the EOHLIC's Affirmative Action Officer find the Contractor in non-compliance a final report recommending the imposition of one or more of the sanctions listed below shall be issued.
- C. Within fifteen (15) days of said report the EOHLIC shall, after due notice and giving the Contractor an opportunity to respond, move to impose one or more of the following sanctions to attain compliance.
- D. If the EOHLIC's Affirmative Action Office believes the Contractor has taken or is taking every possible measure to achieve compliance, a report shall show the Contractor is complying.

## 1.09 SANCTIONS

- A. For each week that the Contractor fails or refuses to comply, the EOHLIC may recover from the Contractor 1/100 of 1% of the original Contract Sum or \$1000 whichever sum is greater, in liquidated damages.
- B. If a Subcontractor is in non-compliance, the EOHLIC may recover from the Contractor, 1/10 of 1% of the Subcontract Sum, or \$400 whichever sum is greater, in liquidated damages, to be assessed by the Contractor as a back charge against the Subcontractor for each week that Subcontractor fails or refuses to comply.

- C. The Awarding Authority may suspend part or all of any payment due under the contract until such time as the Contractor or any Subcontractor is able to demonstrate compliance with the terms of the Contract.
- D. The Awarding Authority may terminate, or cancel part or all of the Contract, in accordance with the provisions of Article 19 of the General Conditions, unless the Contractor or any Subcontractor is able to demonstrate, within a specified time, compliance with the terms of the Contract.
- E. The Contractor may request the EOHLC and Awarding Authority to suspend the sanctions conditionally. Whereupon the EOHLC shall investigate corrective measures taken by the Contractor and shall either lift or re- impose the sanctions.

#### 1.10 SEVERABILITY

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

#### 1.11 REQUIRED EEO FORMS

- A. The following forms are included as part of Section 01 73 36
  - 1. Form of Contractor's Equal Employment Certificate 017336.01.
  - 2. EEO Contractor's Weekly Manpower Report 017336.03

END OF SECTION

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Section 00 73 36.01  
FORM OF CONTRACTOR'S EQUAL EMPLOYMENT CERTIFICATION  
MGL c.30 §39M Over \$50K

This form must be completed and submitted by the Contractor prior to the signing of the Awarding Authority/Contractor Agreement.

**This certifies that:**

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City/State/Zip Code

1. Intends to use the following listed construction trades in the work under this contract:

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

2. Will comply with the affirmative action steps contained in Article 13 of the General Conditions of this Contract; and
3. Will obtain similar certifications from each of its subcontractors and submit to the Awarding Authority prior to the award of any subcontract under this contract the subcontractor's certification.

\_\_\_\_\_  
Signature of Authorized Representative of Contractor

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

\_\_\_\_\_  
Date

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## EEO CONTRACTOR'S WEEKLY MANPOWER REPORT

\_\_\_\_\_ Housing Authority      Development No. \_\_\_\_\_      Contract Amount \$ \_\_\_\_\_  
 General Contractor: \_\_\_\_\_      **Minority** Participation Goal **15.3%**      **Women** Participation Goal **6.9%**  
 Name of Contractor Filing Report: \_\_\_\_\_      Trade(s): \_\_\_\_\_  
 Week Ending: \_\_\_\_\_      Report No.: \_\_\_\_\_       Check Here if you are a non-filed Subcontractor  
 Check Here if this is a Final Report      Date Work Began: \_\_\_\_\_      Date Work Completed \_\_\_\_\_

Job Category	# of Employees	Weekly Total Manhours	Total Manhours to Date	# of Minorities	Weekly Total Minority Manhours	Weekly % Minority Manhours	# of Women	Weekly Total Women Manhours	Weekly % Women Manhours	Total Manhours to Date	Total Minority Manhours to Date	% of Minority Manhours to Date	Total Women Manhours to Date	% of Women Manhours to Date

Mail Reports to:      Awarding Authority      Prepared by: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Date: \_\_\_\_\_ 20\_\_\_\_

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Section 00 73 43  
WAGE RATE REQUIREMENTS

PART 1 –

1.01 WAGE RATES

- A. The rate per hour to be paid to mechanics, apprentices, teamsters, chauffeurs, and laborers employed on the Work shall not be less than the rate of wages in the attached "Minimum Wage Rates" as determined by the Director of the Department of Labor and Work Force Development. This schedule shall continue to be the minimum rate of wages for said employees during the life of this Contract. Any questions relative to the applicability of any wage rate shall be directed to the Department of Labor and Workforce Development.
- B. Keep posted on the site a legible copy of said schedule. Provide the Awarding Authority, on a weekly basis, and keep an on-site file of the wage rates and classifications of labor employed on this Work in order that they may be available for inspection by the Awarding Authority, Prime Designer or any other agency having jurisdiction.
- C. 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.
- D. Pay reserve police officers employed on the Work the prevailing rate of wages paid to regular police officers as required by MGL c149 § 34B, as amended. Such police officers shall be covered by Worker's Compensation Insurance and Employers Liability Insurance provided by the Contractor.
- E. The Contractor and all subcontractors shall provide certified payroll affidavits verifying compliance with MGL c.149 §§26 - 27H. [See attached certified payroll form.]
- F. The Contractor and all subcontractors shall provide a Statement of Compliance within 15 days of the completion of its portion of the work. This statement shall be submitted to the Awarding Authority on the form found else- where in this section.
- G. The Contractor and all its subcontractors shall furnish to the Awarding Authority, with the first certified payroll report, documentation indicating that each employee has successfully completed 10 hours of a course in construction safety and health. This course must be approved by the United States Occupational Health and Safety Administration (OSHA)

**SEE ATTACHED WAGE RATES**  
END OF SECTION

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**WEEKLY CERTIFIED PAYROLL REPORT AND WORKFORCE PARTICIPATION FORM**

**CERTIFIED PAYROLL REPORT:** Pursuant to MGL c. 149, s. 27B, every contractor and subcontractor is required to submit a true and accurate copy of their certified weekly payroll records to the awarding authority by first-class mail or e-mail. In addition, each weekly payroll must be accompanied by a statement of compliance signed by the employer. Failure to comply may result in the commencement of a criminal action or the issuance of a civil citation.

**WORKFORCE PARTICIPATION GOALS:** The Commonwealth of Massachusetts has set the following goals for workforce participation for minorities and women. The participation goals for this project shall be 15.3% for minorities and 6.9% for women. The Contractor shall strive to achieve on this project the labor workforce participation goals contained herein. **The Contractor shall enter the number of hours worked in each trade by each employee, identified as woman, minority, or non-minority below.**

Company Name:					Address:					Phone No.:					Payroll No.:									
Employer's Signature:					Title:					Contract No.:					Tax Payer ID #:					Work Week Ending:				
Awarding Authority Name:					Public Works Project Name:					Public Works Project Location:					Min. Wage Rate Sheet Number:									

General / Prime Contractor's Name:					Subcontractor's Name:										Employer Hourly Fringe Benefit Contributions						Check No. (H)			
															(B+C+D+E) (A x F)									
Employee Name & Complete Address	Work Classification	Project Hours Non-Minority	Project Hours Minority	Project Hours Women	Employee is OSHA 10 certified (?)	Appr. Rate (%)	Hours Worked							Project Hours (A) All Other Hours	Hourly Base Wage (B)	Health & Welfare Insurance (C)	ERISA Pension Plan (D)	Supp. Unemp. (E)	Total Hourly Prev. Wage (F)	Total Gross Wages				
							Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.											

**APPRENTICESHIP DOCUMENTATION:**

Please answer the questions below.

- (1) Are any apprentice employees identified above?
- (2) If yes, are all apprentice employees identified above currently registered with the MA DLS Division of Apprentices Standards?
- (3) If yes, is a copy of the apprentice ID card issued by the MA DLS Division of Apprentices Standards included for all apprentice employees identified above?

YES <input type="checkbox"/>	NO <input type="checkbox"/>
YES <input type="checkbox"/>	NO <input type="checkbox"/>
YES <input type="checkbox"/>	NO <input type="checkbox"/>

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MAURA HEALEY  
Governor

KIM DRISCOLL  
Lt. Governor

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

Prevailing Wage Rates

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

LAUREN JONES  
Secretary

MICHAEL FLANAGAN  
Director

**Awarding Authority:** Fitchburg Housing Authority

**Contract Number:** **City/Town:** FITCHBURG

**Description of Work:** Remove and reconstruct asphalt, brick, and concrete hardscape. Loam, seed, plantings, landscape. Drainage infrastructure. Tree removal. Install site amenities and retaining wall.

**Job Location:** 50 Day Street, Fitchburg, MA

**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.

Last Modified: 02/06/2024 at 11:49PM EST

Last Modified: 02/06/2024 at 11:49PM EST

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>	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>	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>	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>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
	06/01/2024	\$39.94	\$9.65	\$17.14	\$0.00	\$66.73
	12/01/2024	\$41.27	\$9.65	\$17.14	\$0.00	\$68.06
	06/01/2025	\$42.66	\$9.65	\$17.14	\$0.00	\$69.45
	12/01/2025	\$44.04	\$9.65	\$17.14	\$0.00	\$70.83
	06/01/2026	\$45.48	\$9.65	\$17.14	\$0.00	\$72.27
	12/01/2026	\$46.92	\$9.65	\$17.14	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ASBESTOS WORKER (PIPES & TANKS) <i>HEAT &amp; FROST INSULATORS LOCAL 6 (WORCESTER)</i>	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>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
	06/01/2024	\$39.44	\$9.65	\$17.14	\$0.00	\$66.23
	12/01/2024	\$40.77	\$9.65	\$17.14	\$0.00	\$67.56
	06/01/2025	\$42.16	\$9.65	\$17.14	\$0.00	\$68.95
	12/01/2025	\$43.54	\$9.65	\$17.14	\$0.00	\$70.33
	06/01/2026	\$44.98	\$9.65	\$17.14	\$0.00	\$71.77
	12/01/2026	\$46.42	\$9.65	\$17.14	\$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>	12/01/2023	\$55.03	\$15.00	\$16.40	\$0.00	\$86.43
	06/01/2024	\$56.33	\$15.00	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.78	\$15.00	\$16.40	\$0.00	\$89.18
	06/01/2025	\$59.08	\$15.00	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.53	\$15.00	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.83	\$15.00	\$16.40	\$0.00	\$93.23
	12/01/2026	\$63.28	\$15.00	\$16.40	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$55.03	\$15.00	\$16.40	\$0.00	\$86.43
	06/01/2024	\$56.33	\$15.00	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.78	\$15.00	\$16.40	\$0.00	\$89.18
	06/01/2025	\$59.08	\$15.00	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.53	\$15.00	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.83	\$15.00	\$16.40	\$0.00	\$93.23
	12/01/2026	\$63.28	\$15.00	\$16.40	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
	06/01/2024	\$39.94	\$9.65	\$17.14	\$0.00	\$66.73
	12/01/2024	\$41.27	\$9.65	\$17.14	\$0.00	\$68.06
	06/01/2025	\$42.66	\$9.65	\$17.14	\$0.00	\$69.45
	12/01/2025	\$44.04	\$9.65	\$17.14	\$0.00	\$70.83
	06/01/2026	\$45.48	\$9.65	\$17.14	\$0.00	\$72.27
	12/01/2026	\$46.92	\$9.65	\$17.14	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2024	\$48.12	\$7.07	\$20.60	\$0.00	\$75.79

Last Modified: 02/06/2024 at 11:49PM EST

**Classification**

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

**Apprentice - BOILERMAKER - Local 29**

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

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

**Notes:**

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

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	02/01/2024	\$60.26	\$11.49	\$22.90	\$0.00	\$94.65
BRICKLAYERS LOCAL 3 (LOWELL)	08/01/2024	\$62.36	\$11.49	\$22.90	\$0.00	\$96.75
	02/01/2025	\$63.66	\$11.49	\$22.90	\$0.00	\$98.05
	08/01/2025	\$65.81	\$11.49	\$22.90	\$0.00	\$100.20
	02/01/2026	\$67.16	\$11.49	\$22.90	\$0.00	\$101.55
	08/01/2026	\$69.36	\$11.49	\$22.90	\$0.00	\$103.75
	02/01/2027	\$70.76	\$11.49	\$22.90	\$0.00	\$105.15

Last Modified: 02/06/2024 at 11:49PM EST



**Classification**

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

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

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.13	\$11.49	\$22.90	\$0.00	\$64.52
2	60	\$36.16	\$11.49	\$22.90	\$0.00	\$70.55
3	70	\$42.18	\$11.49	\$22.90	\$0.00	\$76.57
4	80	\$48.21	\$11.49	\$22.90	\$0.00	\$82.60
5	90	\$54.23	\$11.49	\$22.90	\$0.00	\$88.62

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.18	\$11.49	\$22.90	\$0.00	\$65.57
2	60	\$37.42	\$11.49	\$22.90	\$0.00	\$71.81
3	70	\$43.65	\$11.49	\$22.90	\$0.00	\$78.04
4	80	\$49.89	\$11.49	\$22.90	\$0.00	\$84.28
5	90	\$56.12	\$11.49	\$22.90	\$0.00	\$90.51

**Notes:**

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

<b>BULLDOZER/GRADER/SCRAPER</b>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
<i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>CAISSON &amp; UNDERPINNING BOTTOM MAN</b>	12/01/2023	\$45.48	\$9.65	\$18.22	\$0.00	\$73.35
<i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2024	\$46.96	\$9.65	\$18.22	\$0.00	\$74.83
	12/01/2024	\$48.43	\$9.65	\$18.22	\$0.00	\$76.30
	06/01/2025	\$49.93	\$9.65	\$18.22	\$0.00	\$77.80
	12/01/2025	\$51.43	\$9.65	\$18.22	\$0.00	\$79.30
	06/01/2026	\$52.98	\$9.65	\$18.22	\$0.00	\$80.85
	12/01/2026	\$54.48	\$9.65	\$18.22	\$0.00	\$82.35

For apprentice rates see "Apprentice- LABORER"

<b>CAISSON &amp; UNDERPINNING LABORER</b>	12/01/2023	\$44.33	\$9.65	\$18.22	\$0.00	\$72.20
<i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2024	\$45.81	\$9.65	\$18.22	\$0.00	\$73.68
	12/01/2024	\$47.28	\$9.65	\$18.22	\$0.00	\$75.15
	06/01/2025	\$48.78	\$9.65	\$18.22	\$0.00	\$76.65
	12/01/2025	\$50.28	\$9.65	\$18.22	\$0.00	\$78.15
	06/01/2026	\$51.83	\$9.65	\$18.22	\$0.00	\$79.70
	12/01/2026	\$53.33	\$9.65	\$18.22	\$0.00	\$81.20

For apprentice rates see "Apprentice- LABORER"

Last Modified: 02/06/2024 at 11:49PM EST

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2023	\$44.33	\$9.65	\$18.22	\$0.00	\$72.20
	06/01/2024	\$45.81	\$9.65	\$18.22	\$0.00	\$73.68
	12/01/2024	\$47.28	\$9.65	\$18.22	\$0.00	\$75.15
	06/01/2025	\$48.78	\$9.65	\$18.22	\$0.00	\$76.65
	12/01/2025	\$50.28	\$9.65	\$18.22	\$0.00	\$78.15
	06/01/2026	\$51.83	\$9.65	\$18.22	\$0.00	\$79.70
	12/01/2026	\$53.33	\$9.65	\$18.22	\$0.00	\$81.20
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$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

**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 <i>CARPENTERS-ZONE 3 (Wood Frame)</i>	04/01/2023	\$24.16	\$7.21	\$4.80	\$0.00	\$36.17
All Aspects of New Wood Frame Work						

Last Modified: 02/06/2024 at 11:49PM EST

**Classification**

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

**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 BRICKLAYERS LOCAL 3 (LOWELL)	01/01/2024	\$49.33	\$13.00	\$23.57	\$1.30	\$87.20
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**Apprentice - CEMENT MASONRY/PLASTERING - Lowell**

**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 LABORERS - ZONE 2	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprentice rates see "Apprentice- LABORER"

CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES OPERATING ENGINEERS LOCAL 4	12/01/2023	\$56.13	\$15.00	\$16.40	\$0.00	\$87.53
	06/01/2024	\$57.45	\$15.00	\$16.40	\$0.00	\$88.85
	12/01/2024	\$58.93	\$15.00	\$16.40	\$0.00	\$90.33
	06/01/2025	\$60.26	\$15.00	\$16.40	\$0.00	\$91.66
	12/01/2025	\$61.73	\$15.00	\$16.40	\$0.00	\$93.13
	06/01/2026	\$63.06	\$15.00	\$16.40	\$0.00	\$94.46
	12/01/2026	\$64.54	\$15.00	\$16.40	\$0.00	\$95.94

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Last Modified: 02/06/2024 at 11:49PM EST

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
COMPRESSOR OPERATOR OPERATING ENGINEERS LOCAL 4	12/01/2023	\$35.62	\$15.00	\$16.40	\$0.00	\$67.02
	06/01/2024	\$36.47	\$15.00	\$16.40	\$0.00	\$67.87
	12/01/2024	\$37.42	\$15.00	\$16.40	\$0.00	\$68.82
	06/01/2025	\$38.27	\$15.00	\$16.40	\$0.00	\$69.67
	12/01/2025	\$39.22	\$15.00	\$16.40	\$0.00	\$70.62
	06/01/2026	\$40.08	\$15.00	\$16.40	\$0.00	\$71.48
	12/01/2026	\$41.03	\$15.00	\$16.40	\$0.00	\$72.43

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

DELEADER (BRIDGE) PAINTERS LOCAL 35 - ZONE 2	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 - 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

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.63	\$9.95	\$0.00	\$0.00	\$38.58
2	55	\$31.49	\$9.95	\$6.66	\$0.00	\$48.10
3	60	\$34.36	\$9.95	\$7.26	\$0.00	\$51.57
4	65	\$37.22	\$9.95	\$7.87	\$0.00	\$55.04
5	70	\$40.08	\$9.95	\$20.32	\$0.00	\$70.35
6	75	\$42.95	\$9.95	\$20.93	\$0.00	\$73.83
7	80	\$45.81	\$9.95	\$21.53	\$0.00	\$77.29
8	90	\$51.53	\$9.95	\$22.74	\$0.00	\$84.22

**Notes:**

Steps are 750 hrs.

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

DEMO: ADZEMAN LABORERS - ZONE 2	12/01/2023	\$44.48	\$9.65	\$18.07	\$0.00	\$72.20
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For apprentice rates see "Apprentice- LABORER"

DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 2	12/01/2023	\$45.48	\$9.65	\$18.07	\$0.00	\$73.20
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For apprentice rates see "Apprentice- LABORER"

DEMO: BURNERS LABORERS - ZONE 2	12/01/2023	\$45.23	\$9.65	\$18.07	\$0.00	\$72.95
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Last Modified: 02/06/2024 at 11:49PM EST

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER LABORERS - ZONE 2	12/01/2023	\$45.48	\$9.65	\$18.07	\$0.00	\$73.20
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR LABORERS - ZONE 2	12/01/2023	\$45.23	\$9.65	\$18.07	\$0.00	\$72.95
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER LABORERS - ZONE 2	12/01/2023	\$44.48	\$9.65	\$18.07	\$0.00	\$72.20
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR OPERATING ENGINEERS LOCAL 4	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER PILE DRIVER LOCAL 56 (ZONE 2)	08/01/2020	\$68.70	\$9.40	\$23.12	\$0.00	\$101.22
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER PILE DRIVER LOCAL 56 (ZONE 2)	08/01/2020	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) PILE DRIVER LOCAL 56 (ZONE 2)	08/01/2020	\$73.60	\$9.40	\$23.12	\$0.00	\$106.12
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) PILE DRIVER LOCAL 56 (ZONE 2)	08/01/2020	\$103.05	\$9.40	\$23.12	\$0.00	\$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) DRAWBRIDGE - SEIU LOCAL 888	07/01/2020	\$26.77	\$6.67	\$3.93	\$0.16	\$37.53
ELECTRICIAN ELECTRICIANS LOCAL 96	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

Last Modified: 02/06/2024 at 11:49PM EST

**Classification**

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

**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	01/01/2024	\$61.98	\$16.18	\$20.96	\$0.00	\$99.12
ELEVATOR CONSTRUCTORS LOCAL 41	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

Last Modified: 02/06/2024 at 11:49PM EST

**Classification**

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

**Apprentice - ELEVATOR CONSTRUCTOR - Local 41**

**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

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.42	\$16.28	\$0.00	\$0.00	\$47.70
2	55	\$34.56	\$16.28	\$21.36	\$0.00	\$72.20
3	65	\$40.84	\$16.28	\$21.36	\$0.00	\$78.48
4	70	\$43.98	\$16.28	\$21.36	\$0.00	\$81.62
5	80	\$50.26	\$16.28	\$21.36	\$0.00	\$87.90

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

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

ELEVATOR CONSTRUCTOR HELPER ELEVATOR CONSTRUCTORS LOCAL 41	01/01/2024	\$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) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
	06/01/2024	\$39.44	\$9.65	\$17.14	\$0.00	\$66.23
	12/01/2024	\$40.77	\$9.65	\$17.14	\$0.00	\$67.56
	06/01/2025	\$42.16	\$9.65	\$17.14	\$0.00	\$68.95
	12/01/2025	\$43.54	\$9.65	\$17.14	\$0.00	\$70.33
	06/01/2026	\$44.98	\$9.65	\$17.14	\$0.00	\$71.77
	12/01/2026	\$46.42	\$9.65	\$17.14	\$0.00	\$73.21

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

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY 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

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Last Modified: 02/06/2024 at 11:49PM EST

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2023	\$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>	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>	12/01/2023	\$44.47	\$15.00	\$16.40	\$0.00	\$75.87
	06/01/2024	\$45.53	\$15.00	\$16.40	\$0.00	\$76.93
	12/01/2024	\$46.71	\$15.00	\$16.40	\$0.00	\$78.11
	06/01/2025	\$47.77	\$15.00	\$16.40	\$0.00	\$79.17
	12/01/2025	\$48.94	\$15.00	\$16.40	\$0.00	\$80.34
	06/01/2026	\$50.00	\$15.00	\$16.40	\$0.00	\$81.40
	12/01/2026	\$51.18	\$15.00	\$16.40	\$0.00	\$82.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$25.48	\$9.65	\$17.14	\$0.00	\$52.27
	06/01/2024	\$26.51	\$9.65	\$17.14	\$0.00	\$53.30
	12/01/2024	\$26.51	\$9.65	\$17.14	\$0.00	\$53.30
	06/01/2025	\$27.59	\$9.65	\$17.14	\$0.00	\$54.38
	12/01/2025	\$27.59	\$9.65	\$17.14	\$0.00	\$54.38
	06/01/2026	\$28.71	\$9.65	\$17.14	\$0.00	\$55.50
	12/01/2026	\$28.71	\$9.65	\$17.14	\$0.00	\$55.50
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE II</i>	09/01/2023	\$48.97	\$8.83	\$20.27	\$0.00	\$78.07
	03/01/2024	\$49.47	\$8.83	\$20.27	\$0.00	\$78.57

Last Modified: 02/06/2024 at 11:49PM EST



**Classification**

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

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

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.49	\$8.83	\$1.76	\$0.00	\$35.08
2	55	\$26.93	\$8.83	\$1.76	\$0.00	\$37.52
3	60	\$29.38	\$8.83	\$3.52	\$0.00	\$41.73
4	65	\$31.83	\$8.83	\$3.52	\$0.00	\$44.18
5	70	\$34.28	\$8.83	\$16.75	\$0.00	\$59.86
6	75	\$36.73	\$8.83	\$16.75	\$0.00	\$62.31
7	80	\$39.18	\$8.83	\$18.51	\$0.00	\$66.52
8	85	\$41.62	\$8.83	\$18.51	\$0.00	\$68.96

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.74	\$8.83	\$1.76	\$0.00	\$35.33
2	55	\$27.21	\$8.83	\$1.76	\$0.00	\$37.80
3	60	\$29.68	\$8.83	\$3.52	\$0.00	\$42.03
4	65	\$32.16	\$8.83	\$3.52	\$0.00	\$44.51
5	70	\$34.63	\$8.83	\$16.75	\$0.00	\$60.21
6	75	\$37.10	\$8.83	\$16.75	\$0.00	\$62.68
7	80	\$39.58	\$8.83	\$18.51	\$0.00	\$66.92
8	85	\$42.05	\$8.83	\$18.51	\$0.00	\$69.39

**Notes:** Steps are 750 hrs.  
 % After 10/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)  
 Step 1&2 \$32.63/ 3&4 \$39.28/ 5&6 \$59.86/ 7&8 \$66.52

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

<b>FORK LIFT/CHERRY PICKER OPERATING ENGINEERS LOCAL 4</b>	12/01/2023	\$55.03	\$15.00	\$16.40	\$0.00	\$86.43
	06/01/2024	\$56.33	\$15.00	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.78	\$15.00	\$16.40	\$0.00	\$89.18
	06/01/2025	\$59.08	\$15.00	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.53	\$15.00	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.83	\$15.00	\$16.40	\$0.00	\$93.23
	12/01/2026	\$63.28	\$15.00	\$16.40	\$0.00	\$94.68

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>GENERATOR/LIGHTING PLANT/HEATERS OPERATING ENGINEERS LOCAL 4</b>	12/01/2023	\$35.62	\$15.00	\$16.40	\$0.00	\$67.02
	06/01/2024	\$36.47	\$15.00	\$16.40	\$0.00	\$67.87
	12/01/2024	\$37.42	\$15.00	\$16.40	\$0.00	\$68.82
	06/01/2025	\$38.27	\$15.00	\$16.40	\$0.00	\$69.67
	12/01/2025	\$39.22	\$15.00	\$16.40	\$0.00	\$70.62
	06/01/2026	\$40.08	\$15.00	\$16.40	\$0.00	\$71.48
	12/01/2026	\$41.03	\$15.00	\$16.40	\$0.00	\$72.43

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Last Modified: 02/06/2024 at 11:49PM EST

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>	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 - 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

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.38	\$9.95	\$0.00	\$0.00	\$33.33
2	55	\$25.72	\$9.95	\$6.66	\$0.00	\$42.33
3	60	\$28.06	\$9.95	\$7.26	\$0.00	\$45.27
4	65	\$30.39	\$9.95	\$7.87	\$0.00	\$48.21
5	70	\$32.73	\$9.95	\$20.32	\$0.00	\$63.00
6	75	\$35.07	\$9.95	\$20.93	\$0.00	\$65.95
7	80	\$37.41	\$9.95	\$21.53	\$0.00	\$68.89
8	90	\$42.08	\$9.95	\$22.74	\$0.00	\$74.77

**Notes:**

Steps are 750 hrs.

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

HOISTING ENGINEER/CRANES/GRADALLS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$55.03	\$15.00	\$16.40	\$0.00	\$86.43
	06/01/2024	\$56.33	\$15.00	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.78	\$15.00	\$16.40	\$0.00	\$89.18
	06/01/2025	\$59.08	\$15.00	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.53	\$15.00	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.83	\$15.00	\$16.40	\$0.00	\$93.23
	12/01/2026	\$63.28	\$15.00	\$16.40	\$0.00	\$94.68

Last Modified: 02/06/2024 at 11:49PM EST

**Classification**

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

**Apprentice - OPERATING ENGINEERS - Local 4**

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$30.27	\$15.00	\$0.00	\$0.00	\$45.27
2	60	\$33.02	\$15.00	\$16.40	\$0.00	\$64.42
3	65	\$35.77	\$15.00	\$16.40	\$0.00	\$67.17
4	70	\$38.52	\$15.00	\$16.40	\$0.00	\$69.92
5	75	\$41.27	\$15.00	\$16.40	\$0.00	\$72.67
6	80	\$44.02	\$15.00	\$16.40	\$0.00	\$75.42
7	85	\$46.78	\$15.00	\$16.40	\$0.00	\$78.18
8	90	\$49.53	\$15.00	\$16.40	\$0.00	\$80.93

**Effective Date - 06/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$30.98	\$15.00	\$0.00	\$0.00	\$45.98
2	60	\$33.80	\$15.00	\$16.40	\$0.00	\$65.20
3	65	\$36.61	\$15.00	\$16.40	\$0.00	\$68.01
4	70	\$39.43	\$15.00	\$16.40	\$0.00	\$70.83
5	75	\$42.25	\$15.00	\$16.40	\$0.00	\$73.65
6	80	\$45.06	\$15.00	\$16.40	\$0.00	\$76.46
7	85	\$47.88	\$15.00	\$16.40	\$0.00	\$79.28
8	90	\$50.70	\$15.00	\$16.40	\$0.00	\$82.10

**Notes:**

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

HVAC (DUCTWORK) 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) ELECTRICIANS LOCAL 96	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"

HVAC (TESTING AND BALANCING - AIR) 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"

Last Modified: 02/06/2024 at 11:49PM EST

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>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
For apprentice rates see "Apprentice- LABORER"						
HYDRAULIC DRILLS (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
	06/01/2024	\$39.94	\$9.65	\$17.14	\$0.00	\$66.73
	12/01/2024	\$41.27	\$9.65	\$17.14	\$0.00	\$68.06
	06/01/2025	\$42.66	\$9.65	\$17.14	\$0.00	\$69.45
	12/01/2025	\$44.04	\$9.65	\$17.14	\$0.00	\$70.83
	06/01/2026	\$45.48	\$9.65	\$17.14	\$0.00	\$72.27
	12/01/2026	\$46.92	\$9.65	\$17.14	\$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

Last Modified: 02/06/2024 at 11:49PM EST

**Classification**

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

**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**

<b>IRONWORKER/WELDER</b>	03/16/2023	\$52.42	\$8.35	\$26.70	\$0.00	\$87.47
<i>IRONWORKERS LOCAL 7 (WORCESTER AREA)</i>	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**

Last Modified: 02/06/2024 at 11:49PM EST

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 2	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
LABORER LABORERS - ZONE 2	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65

**Apprentice - LABORER - Zone 2**

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.72	\$9.65	\$16.89	\$0.00	\$49.26
2	70	\$26.50	\$9.65	\$16.89	\$0.00	\$53.04
3	80	\$30.29	\$9.65	\$16.89	\$0.00	\$56.83
4	90	\$34.07	\$9.65	\$16.89	\$0.00	\$60.61

**Notes:**

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

LABORER (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65
	06/01/2024	\$39.19	\$9.65	\$17.14	\$0.00	\$65.98
	12/01/2024	\$40.52	\$9.65	\$17.14	\$0.00	\$67.31
	06/01/2025	\$41.91	\$9.65	\$17.14	\$0.00	\$68.70
	12/01/2025	\$43.29	\$9.65	\$17.14	\$0.00	\$70.08
	06/01/2026	\$44.73	\$9.65	\$17.14	\$0.00	\$71.52
	12/01/2026	\$46.17	\$9.65	\$17.14	\$0.00	\$72.96

**Apprentice - LABORER (Heavy & Highway) - Zone 2**

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.72	\$9.65	\$17.14	\$0.00	\$49.51
2	70	\$26.50	\$9.65	\$17.14	\$0.00	\$53.29
3	80	\$30.29	\$9.65	\$17.14	\$0.00	\$57.08
4	90	\$34.07	\$9.65	\$17.14	\$0.00	\$60.86

**Effective Date - 06/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.51	\$9.00	\$16.89	\$0.00	\$49.40
2	70	\$27.43	\$9.00	\$16.89	\$0.00	\$53.32
3	80	\$31.35	\$9.00	\$16.89	\$0.00	\$57.24
4	90	\$35.27	\$9.00	\$16.89	\$0.00	\$61.16

**Notes:**

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: CARPENTER TENDER <i>LABORERS - ZONE 2</i>	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65
For apprentice rates see "Apprentice- LABORER"						
LABORER: CEMENT FINISHER TENDER <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.36	\$9.40	\$16.89	\$0.00	\$64.65
For apprentice rates see "Apprentice- LABORER"						
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER <i>LABORERS - ZONE 2</i>	12/01/2023	\$37.95	\$9.65	\$17.20	\$0.00	\$64.80
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
	06/01/2024	\$39.44	\$9.65	\$17.14	\$0.00	\$66.23
	12/01/2024	\$40.77	\$9.65	\$17.14	\$0.00	\$67.56
	06/01/2025	\$42.16	\$9.65	\$17.14	\$0.00	\$68.95
	12/01/2025	\$43.54	\$9.65	\$17.14	\$0.00	\$70.33
	06/01/2026	\$44.98	\$9.65	\$17.14	\$0.00	\$71.77
	12/01/2026	\$46.42	\$9.65	\$17.14	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 2</i>	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 2</i>	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$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"						
LASER BEAM OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
	06/01/2024	\$39.44	\$9.65	\$17.14	\$0.00	\$66.23
	12/01/2024	\$40.77	\$9.65	\$17.14	\$0.00	\$67.56
	06/01/2025	\$42.16	\$9.65	\$17.14	\$0.00	\$68.95
	12/01/2025	\$43.54	\$9.65	\$17.14	\$0.00	\$70.33
	06/01/2026	\$44.98	\$9.65	\$17.14	\$0.00	\$71.77
	12/01/2026	\$46.42	\$9.65	\$17.14	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	02/01/2024	\$47.89	\$11.49	\$21.37	\$0.00	\$80.75
	08/01/2024	\$49.57	\$11.49	\$21.37	\$0.00	\$82.43
	02/01/2025	\$50.61	\$11.49	\$21.37	\$0.00	\$83.47
	08/01/2025	\$52.33	\$11.49	\$21.37	\$0.00	\$85.19
	02/01/2026	\$53.41	\$11.49	\$21.37	\$0.00	\$86.27
	08/01/2026	\$55.17	\$11.49	\$21.37	\$0.00	\$88.03
	02/01/2027	\$56.29	\$11.49	\$21.37	\$0.00	\$89.15

Last Modified: 02/06/2024 at 11:49PM EST

**Classification**

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

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

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.95	\$11.49	\$21.37	\$0.00	\$56.81
2	60	\$28.73	\$11.49	\$21.37	\$0.00	\$61.59
3	70	\$33.52	\$11.49	\$21.37	\$0.00	\$66.38
4	80	\$38.31	\$11.49	\$21.37	\$0.00	\$71.17
5	90	\$43.10	\$11.49	\$21.37	\$0.00	\$75.96

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.79	\$11.49	\$21.37	\$0.00	\$57.65
2	60	\$29.74	\$11.49	\$21.37	\$0.00	\$62.60
3	70	\$34.70	\$11.49	\$21.37	\$0.00	\$67.56
4	80	\$39.66	\$11.49	\$21.37	\$0.00	\$72.52
5	90	\$44.61	\$11.49	\$21.37	\$0.00	\$77.47

**Notes:**

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

MARBLE MASONS, TILELAYERS & TERRAZZO MECH	02/01/2024	\$62.42	\$11.49	\$23.56	\$0.00	\$97.47
BRICKLAYERS LOCAL 3 - MARBLE & TILE	08/01/2024	\$64.52	\$11.49	\$23.56	\$0.00	\$99.57
	02/01/2025	\$65.82	\$11.49	\$23.56	\$0.00	\$100.87
	08/01/2025	\$67.97	\$11.49	\$23.56	\$0.00	\$103.02
	02/01/2026	\$69.32	\$11.49	\$23.56	\$0.00	\$104.37
	08/01/2026	\$71.52	\$11.49	\$23.56	\$0.00	\$106.57
	02/01/2027	\$72.92	\$11.49	\$23.56	\$0.00	\$107.97

Last Modified: 02/06/2024 at 11:49PM EST



**Classification**

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

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

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.21	\$11.49	\$23.56	\$0.00	\$66.26
2	60	\$37.45	\$11.49	\$23.56	\$0.00	\$72.50
3	70	\$43.69	\$11.49	\$23.56	\$0.00	\$78.74
4	80	\$49.94	\$11.49	\$23.56	\$0.00	\$84.99
5	90	\$56.18	\$11.49	\$23.56	\$0.00	\$91.23

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.26	\$11.49	\$23.56	\$0.00	\$67.31
2	60	\$38.71	\$11.49	\$23.56	\$0.00	\$73.76
3	70	\$45.16	\$11.49	\$23.56	\$0.00	\$80.21
4	80	\$51.62	\$11.49	\$23.56	\$0.00	\$86.67
5	90	\$58.07	\$11.49	\$23.56	\$0.00	\$93.12

**Notes:**

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

MECH. SWEEPER OPERATOR (ON CONST. SITES) OPERATING ENGINEERS LOCAL 4	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE OPERATING ENGINEERS LOCAL 4	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 3) MILLWRIGHTS LOCAL 1121 - Zone 3	01/02/2023	\$40.16	\$8.58	\$21.57	\$0.00	\$70.31
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Last Modified: 02/06/2024 at 11:49PM EST

**Classification**

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

**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**

<b>MORTAR MIXER</b> <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprentice rates see "Apprentice- LABORER"

<b>OILER (OTHER THAN TRUCK CRANES,GRADALLS)</b> <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$24.41	\$15.00	\$16.40	\$0.00	\$55.81
	06/01/2024	\$25.01	\$15.00	\$16.40	\$0.00	\$56.41
	12/01/2024	\$25.67	\$15.00	\$16.40	\$0.00	\$57.07
	06/01/2025	\$26.27	\$15.00	\$16.40	\$0.00	\$57.67
	12/01/2025	\$26.93	\$15.00	\$16.40	\$0.00	\$58.33
	06/01/2026	\$27.52	\$15.00	\$16.40	\$0.00	\$58.92
	12/01/2026	\$28.19	\$15.00	\$16.40	\$0.00	\$59.59

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>OILER (TRUCK CRANES, GRADALLS)</b> <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$29.86	\$15.00	\$16.40	\$0.00	\$61.26
	06/01/2024	\$30.58	\$15.00	\$16.40	\$0.00	\$61.98
	12/01/2024	\$31.38	\$15.00	\$16.40	\$0.00	\$62.78
	06/01/2025	\$32.10	\$15.00	\$16.40	\$0.00	\$63.50
	12/01/2025	\$32.90	\$15.00	\$16.40	\$0.00	\$64.30
	06/01/2026	\$33.62	\$15.00	\$16.40	\$0.00	\$65.02
	12/01/2026	\$34.42	\$15.00	\$16.40	\$0.00	\$65.82

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>OTHER POWER DRIVEN EQUIPMENT - CLASS II</b> <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>PAINTER (BRIDGES/TANKS)</b> <i>PAINTERS LOCAL 35 - ZONE 2</i>	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

Last Modified: 02/06/2024 at 11:49PM EST

**Classification**

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

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

**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

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.63	\$9.95	\$0.00	\$0.00	\$38.58
2	55	\$31.49	\$9.95	\$6.66	\$0.00	\$48.10
3	60	\$34.36	\$9.95	\$7.26	\$0.00	\$51.57
4	65	\$37.22	\$9.95	\$7.87	\$0.00	\$55.04
5	70	\$40.08	\$9.95	\$20.32	\$0.00	\$70.35
6	75	\$42.95	\$9.95	\$20.93	\$0.00	\$73.83
7	80	\$45.81	\$9.95	\$21.53	\$0.00	\$77.29
8	90	\$51.53	\$9.95	\$22.74	\$0.00	\$84.22

**Notes:**  
Steps are 750 hrs.

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

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

Last Modified: 02/06/2024 at 11:49PM EST

**Classification**

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

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

**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

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.08	\$9.95	\$0.00	\$0.00	\$34.03
2	55	\$26.49	\$9.95	\$6.66	\$0.00	\$43.10
3	60	\$28.90	\$9.95	\$7.26	\$0.00	\$46.11
4	65	\$31.30	\$9.95	\$7.87	\$0.00	\$49.12
5	70	\$33.71	\$9.95	\$20.32	\$0.00	\$63.98
6	75	\$36.12	\$9.95	\$20.93	\$0.00	\$67.00
7	80	\$38.53	\$9.95	\$21.53	\$0.00	\$70.01
8	90	\$43.34	\$9.95	\$22.74	\$0.00	\$76.03

**Notes:**  
Steps are 750 hrs.

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

PAINTER (SPRAY OR SANDBLAST, REPAINT)	01/01/2024	\$45.02	\$9.95	\$23.95	\$0.00	\$78.92
PAINTERS LOCAL 35 - ZONE 2	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

Last Modified: 02/06/2024 at 11:49PM EST

**Classification**

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

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

**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

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.11	\$9.95	\$0.00	\$0.00	\$33.06
2	55	\$25.42	\$9.95	\$6.66	\$0.00	\$42.03
3	60	\$27.73	\$9.95	\$7.26	\$0.00	\$44.94
4	65	\$30.04	\$9.95	\$7.87	\$0.00	\$47.86
5	70	\$32.35	\$9.95	\$20.32	\$0.00	\$62.62
6	75	\$34.67	\$9.95	\$20.93	\$0.00	\$65.55
7	80	\$36.98	\$9.95	\$21.53	\$0.00	\$68.46
8	90	\$41.60	\$9.95	\$22.74	\$0.00	\$74.29

**Notes:**  
Steps are 750 hrs.

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

PAINTER / TAPER (BRUSH, NEW) *	01/01/2024	\$45.56	\$9.95	\$23.95	\$0.00	\$79.46
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	07/01/2024	\$46.76	\$9.95	\$23.95	\$0.00	\$80.66
	01/01/2025	\$47.96	\$9.95	\$23.95	\$0.00	\$81.86

Last Modified: 02/06/2024 at 11:49PM EST

**Classification**

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

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

**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

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.38	\$9.95	\$0.00	\$0.00	\$33.33
2	55	\$25.72	\$9.95	\$6.66	\$0.00	\$42.33
3	60	\$28.06	\$9.95	\$7.26	\$0.00	\$45.27
4	65	\$30.39	\$9.95	\$7.87	\$0.00	\$48.21
5	70	\$32.73	\$9.95	\$20.32	\$0.00	\$63.00
6	75	\$35.07	\$9.95	\$20.93	\$0.00	\$65.95
7	80	\$37.41	\$9.95	\$21.53	\$0.00	\$68.89
8	90	\$42.08	\$9.95	\$22.74	\$0.00	\$74.77

**Notes:**  
Steps are 750 hrs.

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

PAINTER / TAPER (BRUSH, REPAINT)	01/01/2024	\$43.62	\$9.95	\$23.95	\$0.00	\$77.52
PAINTERS LOCAL 35 - ZONE 2	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

Last Modified: 02/06/2024 at 11:49PM EST

**Classification**

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

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

**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

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.41	\$9.95	\$0.00	\$0.00	\$32.36
2	55	\$24.65	\$9.95	\$6.66	\$0.00	\$41.26
3	60	\$26.89	\$9.95	\$7.26	\$0.00	\$44.10
4	65	\$29.13	\$9.95	\$7.87	\$0.00	\$46.95
5	70	\$31.37	\$9.95	\$20.32	\$0.00	\$61.64
6	75	\$33.62	\$9.95	\$20.93	\$0.00	\$64.50
7	80	\$35.86	\$9.95	\$21.53	\$0.00	\$67.34
8	90	\$40.34	\$9.95	\$22.74	\$0.00	\$73.03

**Notes:**  
Steps are 750 hrs.

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

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY)	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2024	\$39.19	\$9.65	\$17.14	\$0.00	\$65.98
	12/01/2024	\$40.52	\$9.65	\$17.14	\$0.00	\$67.31
	06/01/2025	\$41.91	\$9.65	\$17.14	\$0.00	\$68.70
	12/01/2025	\$43.29	\$9.65	\$17.14	\$0.00	\$70.08
	06/01/2026	\$44.73	\$9.65	\$17.14	\$0.00	\$71.52
	12/01/2026	\$46.17	\$9.65	\$17.14	\$0.00	\$72.96

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

PANEL & PICKUP TRUCKS DRIVER	01/01/2024	\$38.78	\$15.07	\$18.67	\$0.00	\$72.52
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	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

Last Modified: 02/06/2024 at 11:49PM EST

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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> For apprentice rates see "Apprentice- LABORER"	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
PIPELAYER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
	06/01/2024	\$39.44	\$9.65	\$17.14	\$0.00	\$66.23
	12/01/2024	\$40.77	\$9.65	\$17.14	\$0.00	\$67.56
	06/01/2025	\$42.16	\$9.65	\$17.14	\$0.00	\$68.95
	12/01/2025	\$43.54	\$9.65	\$17.14	\$0.00	\$70.33
	06/01/2026	\$44.98	\$9.65	\$17.14	\$0.00	\$71.77
	12/01/2026	\$46.42	\$9.65	\$17.14	\$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

Last Modified: 02/06/2024 at 11:49PM EST



**Classification**

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

**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	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprentice rates see "Apprentice- LABORER"

PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
	06/01/2024	\$39.44	\$9.65	\$17.14	\$0.00	\$66.23
	12/01/2024	\$40.77	\$9.65	\$17.14	\$0.00	\$67.56
	06/01/2025	\$42.16	\$9.65	\$17.14	\$0.00	\$68.95
	12/01/2025	\$43.54	\$9.65	\$17.14	\$0.00	\$70.33
	06/01/2026	\$44.98	\$9.65	\$17.14	\$0.00	\$71.77
	12/01/2026	\$46.42	\$9.65	\$17.14	\$0.00	\$73.21

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

POWDERMAN & BLASTER LABORERS - ZONE 2	12/01/2023	\$38.86	\$9.65	\$17.14	\$0.00	\$65.65
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For apprentice rates see "Apprentice- LABORER"

Last Modified: 02/06/2024 at 11:49PM EST

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	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>	12/01/2023	\$55.03	\$15.00	\$16.40	\$0.00	\$86.43
	06/01/2024	\$56.33	\$15.00	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.78	\$15.00	\$16.40	\$0.00	\$89.18
	06/01/2025	\$59.08	\$15.00	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.53	\$15.00	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.83	\$15.00	\$16.40	\$0.00	\$93.23
	12/01/2026	\$63.28	\$15.00	\$16.40	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$35.62	\$15.00	\$16.40	\$0.00	\$67.02
	06/01/2024	\$36.47	\$15.00	\$16.40	\$0.00	\$67.87
	12/01/2024	\$37.42	\$15.00	\$16.40	\$0.00	\$68.82
	06/01/2025	\$38.27	\$15.00	\$16.40	\$0.00	\$69.67
	12/01/2025	\$39.22	\$15.00	\$16.40	\$0.00	\$70.62
	06/01/2026	\$40.08	\$15.00	\$16.40	\$0.00	\$71.48
	12/01/2026	\$41.03	\$15.00	\$16.40	\$0.00	\$72.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 170 -J.G.MacLellan (Lunenburg)</i>	02/02/2024	\$29.00	\$11.17	\$8.00	\$0.00	\$48.17
	01/01/2025	\$29.00	\$11.57	\$8.00	\$0.00	\$48.57
	02/02/2025	\$29.50	\$11.57	\$8.00	\$0.00	\$49.07
	02/02/2026	\$29.50	\$12.37	\$8.00	\$0.00	\$49.87
	01/01/2027	\$30.00	\$12.37	\$8.00	\$0.00	\$50.37
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90

Last Modified: 02/06/2024 at 11:49PM EST

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
ROLLER/SPREADER/MULCHING MACHINE OPERATING ENGINEERS LOCAL 4	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROOFER (Inc.Roofing Waterproofing &Roofing Damproofg) ROOFERS LOCAL 33	02/01/2024	\$50.03	\$12.78	\$21.45	\$0.00	\$84.26
	08/01/2024	\$51.53	\$12.78	\$21.45	\$0.00	\$85.76
	02/01/2025	\$52.78	\$12.78	\$21.45	\$0.00	\$87.01
	08/01/2025	\$54.28	\$12.78	\$21.45	\$0.00	\$88.51
	02/01/2026	\$55.53	\$12.78	\$21.45	\$0.00	\$89.76

**Apprentice - ROOFER - Local 33**

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.02	\$12.78	\$6.21	\$0.00	\$44.01
2	60	\$30.02	\$12.78	\$21.45	\$0.00	\$64.25
3	65	\$32.52	\$12.78	\$21.45	\$0.00	\$66.75
4	75	\$37.52	\$12.78	\$21.45	\$0.00	\$71.75
5	85	\$42.53	\$12.78	\$21.45	\$0.00	\$76.76

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.77	\$12.78	\$6.21	\$0.00	\$44.76
2	60	\$30.92	\$12.78	\$21.45	\$0.00	\$65.15
3	65	\$33.49	\$12.78	\$21.45	\$0.00	\$67.72
4	75	\$38.65	\$12.78	\$21.45	\$0.00	\$72.88
5	85	\$43.80	\$12.78	\$21.45	\$0.00	\$78.03

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

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

ROOFER SLATE / TILE / PRECAST CONCRETE ROOFERS LOCAL 33	02/01/2024	\$50.28	\$12.78	\$21.45	\$0.00	\$84.51
	08/01/2024	\$51.78	\$12.78	\$21.45	\$0.00	\$86.01
	02/01/2025	\$53.03	\$12.78	\$21.45	\$0.00	\$87.26
	08/01/2025	\$54.53	\$12.78	\$21.45	\$0.00	\$88.76
	02/01/2026	\$55.78	\$12.78	\$21.45	\$0.00	\$90.01

For apprentice rates see "Apprentice- ROOFER"

SHEETMETAL WORKER 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

Last Modified: 02/06/2024 at 11:49PM EST

Apprentice - SHEET METAL WORKER - Local 63

Effective Date - 01/01/2024

Table with 7 columns: Step, percent, Apprentice Base Wage, Health, Pension, Supplemental Unemployment, Total Rate. Rows 1-10 showing wage progression from 45% to 90%.

Effective Date - 07/01/2024

Table with 7 columns: Step, percent, Apprentice Base Wage, Health, Pension, Supplemental Unemployment, Total Rate. Rows 1-10 showing wage progression from 45% to 90%.

Notes:

Apprentice to Journeyworker Ratio:1:3

Table with 7 columns: Classification, Effective Date, Base Wage, Health, Pension, Supplemental Unemployment, Total Rate. Rows for SPECIALIZED EARTH MOVING EQUIP < 35 TONS from 01/01/2024 to 01/01/2027.

Last Modified: 02/06/2024 at 11:49PM EST

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>	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>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99

Last Modified: 02/06/2024 at 11:49PM EST

**Classification**

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	02/01/2024	\$61.34	\$11.49	\$23.59	\$0.00	\$96.42
	08/01/2024	\$63.44	\$11.49	\$23.59	\$0.00	\$98.52
	02/01/2025	\$64.74	\$11.49	\$23.59	\$0.00	\$99.82
	08/01/2025	\$66.89	\$11.49	\$23.59	\$0.00	\$101.97
	02/01/2026	\$68.24	\$11.49	\$23.59	\$0.00	\$103.32
	08/01/2026	\$70.44	\$11.49	\$23.59	\$0.00	\$105.52
	02/01/2027	\$71.84	\$11.49	\$23.59	\$0.00	\$106.92

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

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.67	\$11.49	\$23.59	\$0.00	\$65.75
2	60	\$36.80	\$11.49	\$23.59	\$0.00	\$71.88
3	70	\$42.94	\$11.49	\$23.59	\$0.00	\$78.02
4	80	\$49.07	\$11.49	\$23.59	\$0.00	\$84.15
5	90	\$55.21	\$11.49	\$23.59	\$0.00	\$90.29

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.72	\$11.49	\$23.59	\$0.00	\$66.80
2	60	\$38.06	\$11.49	\$23.59	\$0.00	\$73.14
3	70	\$44.41	\$11.49	\$23.59	\$0.00	\$79.49
4	80	\$50.75	\$11.49	\$23.59	\$0.00	\$85.83
5	90	\$57.10	\$11.49	\$23.59	\$0.00	\$92.18

**Notes:**

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

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2023	\$48.33	\$9.65	\$18.22	\$0.00	\$76.20
	06/01/2024	\$49.81	\$9.65	\$18.22	\$0.00	\$77.68
	12/01/2024	\$51.28	\$9.65	\$18.22	\$0.00	\$79.15
	06/01/2025	\$52.78	\$9.65	\$18.22	\$0.00	\$80.65
	12/01/2025	\$54.28	\$9.65	\$18.22	\$0.00	\$82.15
	06/01/2026	\$55.83	\$9.65	\$18.22	\$0.00	\$83.70
	12/01/2026	\$57.33	\$9.65	\$18.22	\$0.00	\$85.20

For apprentice rates see "Apprentice- LABORER"

TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2023	\$44.45	\$9.65	\$18.22	\$0.00	\$72.32
	06/01/2024	\$45.93	\$9.65	\$18.22	\$0.00	\$73.80
	12/01/2024	\$47.40	\$9.65	\$18.22	\$0.00	\$75.27
	06/01/2025	\$48.90	\$9.65	\$18.22	\$0.00	\$76.77
	12/01/2025	\$50.40	\$9.65	\$18.22	\$0.00	\$78.27
	06/01/2026	\$51.95	\$9.65	\$18.22	\$0.00	\$79.82
	12/01/2026	\$53.45	\$9.65	\$18.22	\$0.00	\$81.32

For apprentice rates see "Apprentice- LABORER"

Last Modified: 02/06/2024 at 11:49PM EST

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2023	\$44.33	\$9.65	\$18.22	\$0.00	\$72.20
	06/01/2024	\$45.81	\$9.65	\$18.22	\$0.00	\$73.68
	12/01/2024	\$47.28	\$9.65	\$18.22	\$0.00	\$75.15
	06/01/2025	\$48.78	\$9.65	\$18.22	\$0.00	\$76.65
	12/01/2025	\$50.28	\$9.65	\$18.22	\$0.00	\$78.15
	06/01/2026	\$51.83	\$9.65	\$18.22	\$0.00	\$79.70
	12/01/2026	\$53.33	\$9.65	\$18.22	\$0.00	\$81.20
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	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>	12/01/2023	\$56.56	\$9.65	\$18.67	\$0.00	\$84.88
	06/01/2024	\$58.04	\$9.65	\$18.67	\$0.00	\$86.36
	12/01/2024	\$59.51	\$9.65	\$18.67	\$0.00	\$87.83
	06/01/2025	\$61.01	\$9.65	\$18.67	\$0.00	\$89.33
	12/01/2025	\$62.51	\$9.65	\$18.67	\$0.00	\$90.83
	06/01/2026	\$64.06	\$9.65	\$18.67	\$0.00	\$92.38
	12/01/2026	\$65.56	\$9.65	\$18.67	\$0.00	\$93.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2023	\$58.56	\$9.65	\$18.67	\$0.00	\$86.88
	06/01/2024	\$60.04	\$9.65	\$18.67	\$0.00	\$88.36
	12/01/2024	\$61.51	\$9.65	\$18.67	\$0.00	\$89.83
	06/01/2025	\$63.01	\$9.65	\$18.67	\$0.00	\$91.33
	12/01/2025	\$64.51	\$9.65	\$18.67	\$0.00	\$92.83
	06/01/2026	\$66.06	\$9.65	\$18.67	\$0.00	\$94.38
	12/01/2026	\$67.56	\$9.65	\$18.67	\$0.00	\$95.88
For apprentice rates see "Apprentice- LABORER"						

Last Modified: 02/06/2024 at 11:49PM EST

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2023	\$48.63	\$9.65	\$18.67	\$0.00	\$76.95
	06/01/2024	\$50.11	\$9.65	\$18.67	\$0.00	\$78.43
	12/01/2024	\$51.58	\$9.65	\$18.67	\$0.00	\$79.90
	06/01/2025	\$53.08	\$9.65	\$18.67	\$0.00	\$81.40
	12/01/2025	\$54.58	\$9.65	\$18.67	\$0.00	\$82.90
	06/01/2026	\$56.13	\$9.65	\$18.67	\$0.00	\$84.45
	12/01/2026	\$57.63	\$9.65	\$18.67	\$0.00	\$85.95
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2023	\$50.63	\$9.65	\$18.67	\$0.00	\$78.95
	06/01/2024	\$52.11	\$9.65	\$18.67	\$0.00	\$80.43
	12/01/2024	\$53.58	\$9.65	\$18.67	\$0.00	\$81.90
	06/01/2025	\$55.08	\$9.65	\$18.67	\$0.00	\$83.40
	12/01/2025	\$56.58	\$9.65	\$18.67	\$0.00	\$84.90
	06/01/2026	\$58.13	\$9.65	\$18.67	\$0.00	\$86.45
	12/01/2026	\$59.63	\$9.65	\$18.67	\$0.00	\$87.95
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	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 <i>ELECTRICIANS LOCAL 96</i>	09/03/2023	\$34.49	\$13.00	\$17.22	\$0.00	\$64.71
	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

Last Modified: 02/06/2024 at 11:49PM EST



**Classification**

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

**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**

<b>WAGON DRILL OPERATOR</b> <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprentice rates see "Apprentice- LABORER"

<b>WAGON DRILL OPERATOR (HEAVY &amp; HIGHWAY)</b> <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
	06/01/2024	\$39.44	\$9.65	\$17.14	\$0.00	\$66.23
	12/01/2024	\$40.77	\$9.65	\$17.14	\$0.00	\$67.56
	06/01/2025	\$42.16	\$9.65	\$17.14	\$0.00	\$68.95
	12/01/2025	\$43.54	\$9.65	\$17.14	\$0.00	\$70.33
	06/01/2026	\$44.98	\$9.65	\$17.14	\$0.00	\$71.77
	12/01/2026	\$46.42	\$9.65	\$17.14	\$0.00	\$73.21

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

<b>WASTE WATER PUMP OPERATOR</b> <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$55.03	\$15.00	\$16.40	\$0.00	\$86.43
	06/01/2024	\$56.33	\$15.00	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.78	\$15.00	\$16.40	\$0.00	\$89.18
	06/01/2025	\$59.08	\$15.00	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.53	\$15.00	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.83	\$15.00	\$16.40	\$0.00	\$93.23
	12/01/2026	\$63.28	\$15.00	\$16.40	\$0.00	\$94.68

Last Modified: 02/06/2024 at 11:49PM EST

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER 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- 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.

Last Modified: 02/06/2024 at 11:49PM EST

Section 01 11 00  
SUMMARY OF WORK

1.01 GENERAL PROVISIONS

A. The Work under the Contract consists of:

1. All Work either shown on the Drawings or included in the Specifications unless specifically indicated as not to be done.
2. The Project shall consist of, but not limited to:

Site reconstruction and improvements in four (4) different areas of the property. Day Street improvements, Loading dock area improvements, Blossom Street improvements and an Alternate area within the Courtyard (only accessible by entering through the building). General project scope includes removal of existing pavement, concrete, brick, wood retaining walls. Large and smaller tree removal. Remove portions of wooden structures, pergola, and stairs. Light pole removal. Tree protection. Erosion control measures. Improvements scope includes pavement improvements, concrete sidewalk, stamped concrete (alternate), segmental block retaining walls, bollards, concrete pads, outdoor benches, tables, chairs, bike racks, raised planter boxes, new fencing, fence gates, handrails, concrete sidewalk, driveway apron, curbing, pavement markings, retractable awnings, flag pole, smoking shelter, area drain, trench drain, drainage pipe, crushed stone, loam, seed, mulch, new plantings and trees,

3. The Contractor shall be responsible for providing and paying for a construction administration software application to be used by all participants on the Project at no cost.

B. In addition, the Work under the Contract includes:

1. Work outside the Project Site as called for in the Contract Documents and as required for the performance of the Work.
2. The restoration of any items damaged or destroyed by encroaching upon areas outside the Project Site.
3. Providing and restoring, where appropriate, all temporary facilities.

C. The Contractor's attention is directed to Article 3.3 of the General Conditions.

D. Permits: See Article 3.16.1 of the General Conditions.

E. Utility Back Charges: If applicable, see Article 3.16.5 of the General Conditions.

F. Police Details: If applicable, see Article 3.16.6 of the General Conditions.

G. The site/building and adjacent site/buildings will be occupied during construction unless otherwise noted in the Contract Documents. The Contractor shall take all

necessary precautions to ensure the public safety and convenience of the occupants during construction. Whenever work is to be done inside occupied units, the Contractor's superintendent and an Awarding Authority's representative shall conduct a pre-work inspection of each unit to make note of existing conditions in the unit. Special attention should be paid to areas where new work will meet existing conditions.

- H. The Work must be completed in a continuous uninterrupted operation. The Contractor must use sufficient personnel and adequate equipment to complete all the necessary Work requirements within a minimum period of time.
- I. In accordance with Articles 3.3.7 and 3.3.8 of the General Conditions and unless specifically authorized in writing by the Awarding Authority, the Work must be conducted between the hours of **8:00 AM** and **3:00 PM** on Monday through Friday. No work is to be done on holidays, Saturdays or Sundays or days that the Awarding Authority is closed other than for emergencies.
- J. The Contractor is responsible for the security of partially completed Work until the Final Acceptance of Work by the Awarding Authority.
- K. Only materials and/or equipment intended and necessary for immediate use shall be brought into the Project area. At the end of each workday and at the completion of each phase of Work, equipment and leftover or unused materials shall be removed from the area. There shall be no storage of materials, tools, and/or equipment within any of the occupied dwelling units. Any storage within unoccupied dwelling units or other space controlled by the Awarding Authority must be authorized in writing by the Awarding Authority.
- L. Smoking is not permitted on site or in buildings/facilities.

## 1.02 TIME OF COMPLETION

- A. In accordance with Article 8 of the General Conditions, the Work shall start as stated in the Notice to Proceed and shall be completed within **120** consecutive calendar days.
- B. Notice to Proceed (NTP): Upon the EOHLIC's Validation of the Awarding Authority Contractor Agreement, the Awarding Authority shall issue the NTP for Construction. The NTP shall include the starting and completion date for construction, and the names of the Awarding Authority's contract Officer and Alternate Contract Officer.
- C. The Awarding Authority shall send two (2) copies of the Notice to Proceed to the Contractor. The Contractor shall sign two originals and return one original to the Awarding Authority and keep one copy for its own records.

### 1.03 COORDINATION

- A. In accordance with Article 8.4.1 of the General Conditions, the Contractor shall submit for approval to the Prime Designer a detailed operational plan and construction schedule showing the sequence of operations prior to commencement of any Work at the site. The Awarding Authority must approve any changes to the accepted operational plan and construction schedule. The Awarding Authority shall assist the Contractor to perform the Work in accordance with the approved operational plan by removing obstructions that may be in the Contractor' way, upon proper notice from the Contractor.
- B. In accordance with Article 3.4, the Contractor must retain a competent full-time superintendent, satisfactory to the Awarding Authority, on site during all Work in progress. This representative shall not be changed, except with the consent of the Awarding Authority. The representative shall be in full charge of the Work and all instructions given to this person by the Prime Designer shall be binding.
- C. The Contractor must supply to the Awarding Authority the telephone number of a responsible person who may be contacted during non-workhours for emergencies on the Project.
- D. If access of Work is required in occupied areas outside the Project area, the Contractor's Superintendent and an Awarding Authority's representative shall conduct a pre-work inspection of the area to document the existing conditions. Special attention should be paid to areas where the new work will meet existing conditions.
- E. Services Shutdowns: The Contractor's attention is called to the fact that the continuous operation of services for this building/site is mandatory. If the building is to be left without heat, hot water, domestic water, electricity, gas, sanitary facilities or any other services for more than an eight-hour period, the Contractor shall submit a letter and obtain written approval from the Awarding Authority before proceeding. If the Awarding Authority will not allow this shutdown, but wants a temporary means of supplying said services, the Contractor shall supply all labor, materials or whatever may be required to supply said temporary services at no extra cost to the Awarding Authority and in accordance with the state and local regulations on health and safety. If applicable, see the supplemental General Conditions for the specific procedures to coordinate the utility shutdowns.
- F. Occupancy: All dwelling units and the site will be occupied during construction unless otherwise noted in the Contract Documents.
  - 1. The Contractor shall take all necessary precautions to ensure the public safety and convenience of the occupants during construction.

2. The Awarding Authority may provide a Resident Coordinator to act as liaison with residents and to assist the Contractor in fulfilling the following.
  - a) Notifying all residents two (2) weeks before any work is scheduled in the resident's unit.
  - b) Notifying each resident in writing forty-eight (48) hours before work is scheduled in their individual unit.
  - c) Obtaining signed permission from the resident to enter the unit if the resident is not home during the construction activity.
  - d) Obtain from the Awarding Authority the keys for any vacant unit(s) or any unit (s) where the resident is not at home. The Resident Coordinator will be responsible for the safekeeping of such keys and shall return the keys at the end of the workday to the Awarding Authority.
  - e) Notify the Awarding Authority of any resident who refuses to cooperate with the proposed operational plan.

#### 1.04 WORK UNDER SEPARATE CONTRACT

- A. Coordination by the Awarding Authority: NOT USED
- B. Coordination by Contractor: NOT USED

#### 1.05 ITEMS FURNISHED BY AWARDING AUTHORITY

- A. Awarding Authority furnished and Contractor installed Items: NOT USED
- B. Awarding Authority furnished and Contractor pick-up and installed Items: NOT USED

#### 1.06 SAMPLE WORK - NOT USED

#### 1.07 RETAINED ITEMS - NOT USED

#### 1.08 PHASING

- A. At the pre-construction meeting, the Contractor shall submit a construction schedule showing the proposed schedule for the Work as noted on the phasing plan drawings. The Awarding Authority and Prime Designer will work with the Contractor to ensure proper coordination.
- B. The building/site will be occupied during the construction until final acceptance of the Work. Safety is of paramount importance on this Project. The Contractor

must take measure to maintain a clean work site and to secure the site in a safe manner for the public, occupants, and property at all times.

#### 1.09 DISRUPTIVE WORK and IRREGULAR WORK HOURS

- A. Awarding Authority's Operations Take Precedence: At no increase in the Contract Amount, the Contractor shall adjust its Work schedule to accommodate the needs of the Awarding Authority, including, but not limited to, any plumbing shutdowns for "tie-ins", plumbing "drain-downs", asbestos abatement, irregular work hours, etc.
- B. Irregular Work Hours: NOT USED

#### 1.10 SPECIAL REQUIREMENTS

- A. The special requirements for this Project are as follows.

Contractor will need to coordinate work with a local artist retained by the Owner.

END OF SECTION

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SECTION 01 23 00  
ALTERNATES

1.01 SCOPE

- A. This Section lists the Alternates which appear in the Contract Documents. Consult the individual sections of the detailed requirements of each Alternate.
- B. Bid prices for each Alternate shall include overhead, profit, and all other expenses incidental to the Work under each Alternate.
- C. The Contractor and Subcontractors shall be responsible for examining the scope of each Alternate generally defined herein and for recognizing modifications to the Work caused by the Alternates and including the cost thereof in the bid price.
- D. The Contractor's alternate amount shall include the net change in cost to perform all of the work described in the Alternate.

1.02 LIST OF ALTERNATES

**ALTERNATE NO. 1: Stamped Concrete**

**Description:** Alternate #1 is to swap areas of concrete sidewalk or patio to stamped concrete. Coordinate with Owner on pattern and color. Provide Owner with sample options for their choosing.

**Performance Period:** Add 5 calendar days

**ALTERNATE NO. 2: Courtyard**

**Description:** Alternate #2 is associated with the work and scope located in the interior courtyard (enlargement area #3). Area is only accessible by passing thru the interior of the building. Contractor shall account for going thru the building to access this area when bidding on material, labor, and equipment.

**Performance Period:** Add 10 calendar days

END OF SECTION

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Section 01 26 00  
CONTRACT MODIFICATION PROCEDURES

1.01 GENERAL

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Related Sections include the following:
1. Section 01 22 00 Unit Prices for administrative requirements for using unit prices.
  2. Section 01 29 00 Payment Procedures for administrative requirements for Applications for Payments and payment for Work perform relative to this section.
  3. Section 01 74 19 Construction and Demolition Waste Management.

1.03 MINOR CHANGES IN THE WORK

- A. The Prime Designer will issue in consultation with the Construction Advisor supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time and in accordance with the requirements of Article 7 of the General Conditions.

1.04 CHANGE REQUESTS

- A. **Awarding Authority – Initiated Proposals (Change Requests):** The Prime Designer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
1. Change Requests issued by Prime Designer are for information only. Do not consider the instructions either to stop work in progress or to execute the proposed change.
  2. Within time specified in the Change Request, but in no event more than twenty-one (21) days after receipt of Change Request, submit a written quotation (Proposed Change Order) estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

Proposed Change Orders shall include:

- a. A list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made.
- b. The amount of workforce labor required or eliminated based on the hourly wage rates found elsewhere in these documents.
- c. Applicable, delivery charges, equipment rental, and amounts of trade discounts.
- d. A written statement as to the impact on the construction schedule.

**B. Contractor – Initiated Proposals: (Change Requests):** If latent or unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a change request to the Prime Designer which:

1. Includes a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Includes a Proposed Change Order that itemizes the quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicates the amount of workforce labor required or eliminated based on the hourly wage rates found elsewhere in these documents.
4. Indicates applicable, delivery charges, equipment rental, and amounts of trade discounts.
5. Complies with requirements in Section 01 33 00 OR Equals Product Substitutions if the proposed change requires substitution of one product or system for a product or system specified.

C. The Contractor shall submit claims for increased costs because of a change in scope in the Contract Documents before starting work on any unforeseen or unknown condition. The Awarding Authority will reject claims submitted prior to such authorization unless a method of monitoring the impact on Contract Sum and Contract Time has been authorized.

## 1.05 CHANGE ORDER PROCEDURES

- A. Upon the Prime Designer's agreement with a Contractor's Proposed Change Order, the Prime Designer will prepare a Change Order for signatures of the Awarding Authority, Contractor, and EOHLIC subject to the policies described in the Construction Handbook.
- B. The Change Order form can be found in the Construction Handbook or on the EOHLIC Website and a sample can be seen at the end of this Section.

- C. The Contractor shall provide the necessary supporting documentation for the prompt approval of Change Orders by the Awarding Authority and the EOHLC. The Contractor shall be fully responsible for any delays caused by a lack of adequate supporting documentation.
- D. All change Orders require a vote of approval by the Awarding Authority Board.
- E. Change Orders over \$5,000 or those that will result in a cumulative added total of 5% or more of the Original Contract Sum must also be approved by the EOHLC Administrator.
- F. Payment for Change Order Work shall be by the regular payment procedure described in Section 00 29 00 and the Construction Handbook.
- G. The Awarding Authority will be responsible for disseminating copies of all approved Change Orders.

#### 1.06 CONSTRUCTION CHANGE DIRECTIVE

- A. A Construction Change Directive instructs the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order as required by Article 7 of the General Conditions. A Construction Change Directive contains a complete description of a change in the Work. It also designates the method to be followed to determine any change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
  - 1. After completion of a change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.
  - 2. The costs must be incorporated into a Change Order which must be approved following the process described in paragraph 1.05 of this Section.
- C. The process for when and how to utilize a Construction Change Directive and the necessary methods for monitoring said Work are described in the Construction Handbook.
- D. The Construction Change Directive form can be found in the Construction Handbook or on the EOHLC website, and a sample can be seen at the end of this section.
- E. Payment for work completed under the auspices of a Construction Change Directive must be included in an approved Change Order before any payment for extra work can be made per the process described in Section 01 29 00.

## 1.07 REQUIRED CONTRACT MODIFICATION FORMS

- A. The following forms are included as part of Section 01 26 00.
1. Change Order Form 012600.01.
  2. Construction Change Directive Form 012600.02.

END OF SECTION



## CHANGE ORDER

Owner: \_\_\_\_\_ Housing Authority Date: \_\_\_\_\_ Number \_\_\_\_\_

Development Number(s): \_\_\_\_\_ EOHLC No: \_\_\_\_\_

Contractor: \_\_\_\_\_ Prime Designer: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone No: \_\_\_\_\_ Telephone No: Fax: \_\_\_\_\_

Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Email: \_\_\_\_\_

The following change is ordered in accordance with Article 8 of the General Conditions of the Contract:

The Work described above shall (increase) (decrease) (not affect) the Contract Sum by: \$ \_\_\_\_\_

The Work described above represents an increase in the Original Contract Sum of \_\_\_\_\_ %

The effect of all Change Orders (including this one) is to increase in the Original Contract Sum by: \_\_\_\_\_ %

The Work described above shall (increase) (not affect) the Contract Time by \_\_\_\_\_ calendar days

The conditions hereinbefore referred to are as follows:

- A. The aforementioned change and work affected thereby is subject to all contract stipulations and covenants.
- B. The rights of the Awarding Authority are not prejudiced.
- C. All claims against the Awarding Authority which are incidental to or a consequence of the aforementioned change are satisfied.
- D. This change order is not valid until approved by the Awarding Authority, Prime Designer and EOHLC.
- E. Signature of the Contractor indicates agreement herewith, including adjustment to contract sum and/or contract time.

The above named Housing Authority met on \_\_\_\_\_ and voted to approve this Change Order:

Certified: \_\_\_\_\_  
Contract Officer

Approved: Prime Designer

Firm: \_\_\_\_\_

By: \_\_\_\_\_

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

Reviewed: Construction Advisor  
Executive Office of Housing and Livable Communities

By: \_\_\_\_\_

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

Approved: Contractor Firm:

By: \_\_\_\_\_

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

Approved: Director of Construction Management  
Executive Office of Housing and Livable Communities

By: \_\_\_\_\_

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

DHCD \_\_\_\_\_

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# CONSTRUCTION CHANGE DIRECTIVE

Commonwealth of Massachusetts  
Executive Office of Housing and Livable Communities

CHANGE DIRECTIVE NO: \_\_\_\_\_

Owner: \_\_\_\_\_ **Housing Authority** Date: \_\_\_\_\_

Development Number: \_\_\_\_\_ **EOHLC Number** \_\_\_\_\_

Contractor \_\_\_\_\_ Prime Designer \_\_\_\_\_

Telephone No: \_\_\_\_\_

Telephone No: \_\_\_\_\_

Fax: \_\_\_\_\_

Fax: \_\_\_\_\_

Pursuant to Article 8 of the General Conditions you are hereby directed to make the following change(s) in this Contract

**DO NOT USE THIS FORM FOR LUMP SUM CHANGES OR TIME EXTENSIONS**

The Contract Sum shall be adjusted by the following method (please check one)

- A.  Unit Price of \$ \_\_\_\_\_ per \_\_\_\_\_
- B.  Unit Prices found in Section 01.20.00 of the specifications.
- C.  Unit Prices found on the Attached list.
- D.  Time and materials basis per Article 8.3.1.3 of the General Conditions
- E.  Subject to the Conditions of Article 8.5 and 8.7 of the General Conditions **"Work Done Under Protest"**. The Contractor is not relieved of the obligation to notify the Owner's Representative when protested work is being performed, to allow for accurate monitoring. Failure to provide such notice may jeopardize the Contractor's right to compensation.
- F.  As follows: \_\_\_\_\_

**THE NOT TO EXCEED LIMIT FOR THIS CHANGE DIRECTIVE IS \$ \_\_\_\_\_**

- The Contract time shall be properly adjusted upon completion of any compensable work.
- Payment for the aforementioned work cannot be processed until executing an appropriate change order(s) to adjust the contract sum.
- When signed by the Owner and EOHLC and received by the Contractor, this Construction Change Directive becomes effective IMMEDIATELY, and the Contractor shall proceed with the change(s) described above.
- This change directive is not valid until approved by the Awarding Authority and EOHLC

**Approved: Architect**

**Approved: Owner**

Firm: \_\_\_\_\_

\_\_\_\_\_ **Housing Authority**

By: \_\_\_\_\_

By: \_\_\_\_\_

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

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

**Reviewed Construction Advisor**  
Executive Office of Housing and Livable Communities

**Approved: Director of Construction Management**  
Executive Office of Housing and Livable Communities

By: \_\_\_\_\_

By: \_\_\_\_\_

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

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

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Section 01 29 00  
PAYMENT PROCEDURES

1.01 GENERAL

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Related Sections include the following:
  - 1. Section 01 22 00 Unit Prices for administrative requirements governing use of unit prices.
  - 2. Section 01 26 00 Contract Modification Procedures for administrative procedures for handling changes to the Contract.
  - 3. Section 01 74 19 Construction Waste and Demolition Management.
  - 4. Section 01 77 00 Project Closeout Procedures and record drawings.

1.03 SCHEDULE OF VALUES

- A. Reference Article 9.2 of the General Conditions.
- B. The Contractor shall submit the Schedule of Values prior to the commencement of the Work and no later than seven (7) calendar days before the initial Application of Payment. The Schedule of Values shall be approved by the Prime Designer prior to processing the initial Application of Payment.
- C. The Schedule of Values may contain Sub-schedules where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values correlated with each phase of payment.
- D. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Summary Schedule of Values. Provide a minimum of at least one line item for each Specification Section. Provide additional breakdown of larger sections when requested by the Prime Designer.
  - 1. Identification: Include the following Project identification on the Schedule of Values.
    - a) Project name and location.
    - b) Name of Architect.
    - c) EOHLC's No:
    - 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) Change Orders Approved by the LHA and the EOHLC.
  - e) Dollar value.
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 in accordance with the examples shown in the Construction Handbook.
  4. Subdivide filed subcontract amounts into major tasks.
  5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
  6. 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. Differentiate between items stored on-site and items stored off-site. Include evidence of Transfer of Title of material and proof of ownership by the contractor, insurance, or bonded warehousing.
  7. 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.
  8. 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 the EOHLC Construction Advisor's option.

#### 1.04 APPLICATIONS FOR PAYMENT

- A. Reference Articles 9.3, 9.4 and 9.5 of the General Conditions.
- B. Payment Application Content: Each Application for Payment shall be consistent with previous applications and payments as certified by the Prime Designer and paid for by the Awarding Authority.
- C. The Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involves additional requirements.
- D. Payment Application Times: Progress payments shall be submitted to the Prime Designer on a day agreed to at the beginning of the Work by the Prime Designer, Awarding Authority, and the EOHLC Construction Advisor. The period covered by each Application for Payment is one month, ending on the last day of the month.
- E. Payment Applications Forms: Use the Application for Payment and Continuation forms found in the Construction Handbook. These forms are also available on the EOHLC Web site [www.Mass.gov/EOHLC](http://www.Mass.gov/EOHLC) and a sample form is included at the end of this Section.
- F. Application Preparation: Complete every entry on the form. The Prime Designer will return incomplete applications without action for not being in proper form.
  1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.

2. Include amounts of Change Orders approved by the Awarding Authority and the EOHLIC before the last day of the construction period covered by application.
- G. Transmittal: Submit one (1) final signed and notarized original copy of each Application for Payment to the Prime Designer by a method ensuring receipt within 24 hours.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with the submittal of first Application for Payment include the following:
1. Project Directory.
  2. Schedule of Values.
  3. Contractor's Construction Schedule.
  4. Products list.
  5. Any proposed product substitutions/or equals.
  6. Submittals Schedule.
  7. List of Contractor's staff assignments (Project Directory).
  8. List of Contractor's principal consultants.
  9. Copies of building permits.
  10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
- I. Payroll Certifications – In addition to the requirement to provide weekly payroll certifications as required by MGL c.149 §§26 - 27H, the Contractor shall provide evidence that required each Application for Payment that such submissions are current. Applications received without such certified payroll documentation shall be considered not in proper form and returned to the Contractor for re-submittal with required documentation.
- J. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting the claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Awarding Authority's occupancy of designated portions of the Work.
- K. Final Payment Application: Submit the final Application for Payment with supporting documentation required by Section 01 77 00 Close out Procedures and Project Record Drawings.

## 1.05 REQUIRED PAYMENT PROCEDURE FORMS

- A. The following forms are included as part of Section 01 29 00.
1. Application for Payment 012900.01.
  2. Continuation Sheet 012900.02.

END OF SECTION

Payment Procedures  
01 29 00 - 3

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# APPLICATION AND CERTIFICATE FOR PAYMENT

Contractor: \_\_\_\_\_ To: \_\_\_\_\_ Housing Authority  
 \_\_\_\_\_  
 Telephone: \_\_\_\_\_ Telephone: \_\_\_\_\_  
 Fax: \_\_\_\_\_ Fax: \_\_\_\_\_  
 Email: \_\_\_\_\_ Email: \_\_\_\_\_  
 Development No. \_\_\_\_\_ Period Ending: \_\_\_\_\_  
 Contract for: \_\_\_\_\_ EOHLC No: \_\_\_\_\_

## CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below in connection with the Continuation Sheet Attached.

	Number
1. ORIGINAL CONTRACT SUM	\$ .00
2. Net change by Approved Change Orders	\$ .00
3. CONTRACT SUM TO DATE (Line 1 + Line 2)	\$ .00
4. TOTAL COMPLETED & STORED TO DATE	\$ .00
5. RETAINAGE - 5% of Total Completed and Stored to Date	\$ .00
6. TOTAL COMPLETED LESS RETAINAGE (Line 4 - Line 5)	\$ .00
7. LESS PREVIOUS APPROVED CERTIFICATES FOR PAYMENT	\$ .00
8. CURRENT PAYMENT DUE (Line 6 - Line 7)	\$ .00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, that all workers used on this project have been paid in accordance with M.G.L. c. 149 §26-27H, that all subcontractors have been paid in accordance with M.G.L. c.30 §39F, that the Contractor has complied with all applicable tax laws pursuant to M.G.L. c.62(c) §49(a), and that the current payment shown herein is now due. Acceptance of the final payment due under this contract shall operate as a release to the Owner, Department and Architect from all claims and liability.

### CONTRACTOR:

By: \_\_\_\_\_ Date \_\_\_\_\_ State of \_\_\_\_\_ County of: \_\_\_\_\_  
 On this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_ before me, the undersigned notary public, \_\_\_\_\_ personally appeared, proved to me through satisfactory evidence which was \_\_\_\_\_ to be the person whose name is signed on the preceding document in my presence  
 NOTARY SEAL  
 Notary Public: \_\_\_\_\_  
 My Commission expires: \_\_\_\_\_

## Prime Designer's CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on site observations and the data comprising the application, the Prime Designer certifies to the Awarding Authority that to the best of the Prime Designer's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

PRIME DESIGNER AMOUNT CERTIFIED .....\$ \_\_\_\_\_

By: \_\_\_\_\_ Date \_\_\_\_\_  
 Title \_\_\_\_\_

Attach an explanation if the amount certified differs from the amount claimed due by the Contractor on line 8 above. Initial all figures on the application and any continuation sheet that changed in accordance with M.G.L. c.30 §39K.

\_\_\_\_\_ Housing Authority EOHLC Construction Advisor: \_\_\_\_\_ EOHLC - Director Construction Management  
 By: \_\_\_\_\_ By: \_\_\_\_\_ By: \_\_\_\_\_  
 Date: \_\_\_\_\_ Date: \_\_\_\_\_ Date: \_\_\_\_\_

For Greater than 95%

EOHLC AMOUNT APPROVED \$ \_\_\_\_\_

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**Project:**  
**Continuation Sheet**

Page      of

**Payment Application Number:**  
**Period to:**

A	B	C	D	E	F	G	H	I
Spec. Section	Description of Work	Scheduled Value	Previously Approved	Completed this Period	Materials Stored Not in D or E	Total Completed and Stored to Date D+E+F	%	Balance to Finish
<b>SAMPLE</b>								

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Section 01 33 00  
SUBMITTAL PROCEDURES

1.01 RELATED DOCUMENTS

- A. This Section supplements Articles 3.6.3, 3.7, 3.8, 3.15 and 4.3.5 of the General Conditions.
- B. Consult the individual sections of the specifications for the specific submittals required under those sections and for further details and descriptions of the requirements.

1.02 GENERAL PROCEDURES FOR SUBMITTALS

- A. **Timeliness** - The Contractor shall transmit all submittals within 30 calendar days after the Notice to Proceed for Projects with a performance period of 60 calendar days or greater and within 14 calendar days for Projects with a performance period less than 60 calendar days as specified Section 01 11 00 paragraph 1.02. In addition, the Contractor shall transmit each submittal to the Prime Designer in advance of performing related Work or other applicable activities so that the installation is not delayed by processing times, including disapproval and re-submittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. The Prime Designer shall review the submittals in accordance with Article 4.3.5 of the General Conditions. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Prime Designer in advance of the Work.
- B. **Sequence** - The Contractor shall transmit each submittal in a sequence which will not result in the Prime Designer's approval having to be later modified or rescinded by reason of subsequent submittals which should have been processed earlier or concurrently for coordination.
- C. **Contractor's Review and Approval** - Only submittals received from and bearing the stamp of approval of the Contractor will be considered for review by the Prime Designer. Submittals shall be accompanied by a transmittal notice stating name of Project, date of submittal, "To", "From" (Contractor, Subcontractor, Installer, Manufacturer, Supplier), Specification Section, or Drawing number to which the submittal refers, purpose (first submittal, re-submittal), description, remarks, distribution record, and signature of transmitter.
- D. **Contractor's Submittal Log** - On a weekly basis, the Contractor shall prepare and submit a log documenting the status (open or closed) of each submittal and the date forwarded to the Prime Designer for review. On "open" submittals, the Contractor shall identify if the submittal is a "priority" due to the lead time and potential impact on the construction schedule. On submittals returned by the

Prime Designer, the Contractor shall document the date returned and the action taken by the Prime Designer.

E. Prime Designer's Action - The Prime Designer will review the Contractor's submittals and return them with one of the following actions recorded thereon by appropriate markings:

1. Final Unrestricted Release: Where marked "No Exception Taken" the Work covered by the submittal may proceed provided it complies with the requirements of the Contract Documents.
2. Final-But-Restricted Release: When marked "Exception as Noted – do not resubmit" the Work may proceed provided it complies with the Prime Designer's notations or corrections on the submittal and complies with the requirements of the Contract Documents. Acceptance of the Work will depend on these compliances.
3. Returned for Re-submittal: When marked "Exception as Noted - resubmit" or "Rejected" the Work covered by the submittal (such as purchasing, fabrication, delivery, or other activity) should not proceed. The submittal shall be revised, or a new submittal resubmitted without delay, in accordance with the Prime Designer's notations stating the reasons for returning the submittal.
4. No Action Required: When marked "No Action Required", the Work covered by the submittal is for information only and does not require review or action by the Prime Designer.

F. Processing - All costs for printing, preparing, packaging, submitting, resubmitting, and delivering submittals required by this Contract shall be included in the Contract Sum.

1. The Contractor shall electronically deliver (in PDF format) submittals to the Prime Designer and copy the Awarding Authority and Owner's Project Manager (OPM) if applicable. Submittals forwarded directly from subcontractors, manufacturers, or vendors or directly to the Prime Designer's consultants will be returned without action. The Prime Designer will be responsible for distribution of the submittals to the consultants for review and action.
2. The Contractor shall be responsible for preparing a "hard copy" of the submittal when requested by the Prime Designer and/or Awarding Authority. The Contractor will be responsible for converting the hard copy submittal, with the Prime Designer's actions, into an electronic format (in PDF format) as part of the final close-out documents.
3. Upon review by the Prime Designer, the consultants, the Awarding Authority and/or OPM, the Prime Designer will return an electronic copy of the submittal annotating the action taken.
4. The Contractor is responsible for distribution of the reviewed submittals to the Contractor's personnel and subcontractors.
5. The Contractor shall retain an electronic copy of each submittal and the

action taken by the Prime Designer for submission as "record submittals" at the close-out of the Project in accordance with Section 01 77 00.

- G. Substitutions - Prepare and process all substitutions in accordance with Article 3.6.3 of the General Conditions.

### 1.03 OR EQUALS

- A. Definition - Whenever a specification section names one or more brands for a given item, and the Contractor wishes to submit, for consideration, another brand, the submission shall be considered an "or-equal" or a "material substitution". For the purposes of this Contract, the terms "or-equal" and "material substitution" shall be considered synonymous.
- B. In no case may an item be furnished on the Work other than the item named or described, unless the Prime Designer, with the Awarding Authority's written concurrence, shall consider the item equal to the item so named or described, as provided by M.G.L. c.30 § 39M.
- C. The equality of items offered as "equal" to items named or described shall be proved to the satisfaction of the Prime Designer at the expense of the Contractor submitting the substitution in accordance with the process described in Article 3.6.3 of the General Conditions.

### 1.04 SUBMISSION OF PRODUCT DATA

- A. The Contractor shall submit an electronic copy (PDF format) of Product Data to the Prime Designer. The electronic copy shall be a single file for each submittal (multiple files will not be accepted). All such data shall be specific, and identification of material or equipment submitted shall be clearly marked. Data of a general nature will not be accepted.
- B. Product Data shall be accompanied by a transmittal notice. The Contractor's stamp of approval shall appear on the printed information itself, in a location which will not impair legibility.
- C. Product Data returned by the Prime Designer as "Rejected" shall be resubmitted in an electronic copy until the Prime Designer's approval is obtained.
- D. When the Product Data are acceptable, the Prime Designer will mark them " No Exception Taken" or " Exception as Noted – do not resubmit" and transmit an electronic copy to the Contractor. The Contractor shall provide and distribute additional copies as may be required to complete the Work.

- E. The Contractor shall maintain one full set of approved and original, Product Data at the Site.

#### 1.05 SUBMISSION OF SHOP DRAWINGS

- A. Shop Drawings shall be complete, giving all information necessary or requested in the individual section of the specifications. They shall also show adjoining Work and details of connection thereto.
- B. Shop Drawings shall be for whole systems. Partial submissions will not be accepted.
- C. The Prime Designer reserves the right to review and approve shop drawings only after approval of related product data and samples.
- D. Shop drawings shall be properly identified and contain the name of the project, name of the firm submitting the shop drawings, shop drawing number, date of shop drawings and revisions, Contractor's stamp of approval and sufficient spaces near the title block for the Prime Designer's stamp.
- E. The Contractor shall submit an electronic copy (PDF format) of Shop Drawings to the Prime Designer. The electronic copy shall be a single file for each submittal (multiple files will not be accepted). Each submittal shall be accompanied by a transmittal notice.
- F. When the Prime Designer returns the electronic copy marked "Exception as Noted - resubmit" or "Rejected", the Contractor shall correct the original drawing or prepare a new drawing and resubmit the electronic copy to the Prime Designer for action. This procedure shall be repeated until the Prime Designer's approval is obtained.
- G. When the Prime Designer returns an electronic copy marked "No Exception Taken" or "Exception as Note – do not resubmit", the Contractor shall provide and distribute copies for all Contractor and Subcontractors use.
- H. The Contractor shall maintain one full set of approved shop drawings at the Site.

#### 1.06 SUBMISSION OF SAMPLES

- A. Unless otherwise specified in the individual section, the Contractor shall submit two specimens of each sample.
- B. Samples shall be of adequate size to permit proper evaluation of materials. Where variations in color or in other characteristics are to be expected, samples

shall show the maximum range of variation. Materials exceeding the variation of approved samples will not be approved on the Work.

- C. Samples of items of interior finishes shall be submitted all at once to permit a coordinated selection of colors and finishes.
- D. Samples that can be conveniently mailed shall be sent directly to the Prime Designer, accompanied by a transmittal notice. All transmittals shall be stamped with the Contractor's approval stamp of the material submitted. In addition, the Contractor shall forward an electronic copy of the transmittal to the Prime Designer.
- E. All other samples shall be delivered at the field office with sample identification tag attached and properly filled in. Transmittal notice of samples so delivered with the Contractor's stamp of approval shall be mailed to the Prime Designer.
- F. If a sample is rejected by the Prime Designer, a new sample shall be resubmitted in the specified manner. This procedure shall be repeated until the Prime Designer approves the sample.
- G. Samples will not be returned unless return is requested at the time of submission. Samples shall not be incorporated into the final Work. At no additional cost, the Awarding Authority reserves the right to require submission of samples whether the sample mention is made in the specifications.

#### 1.07 MEP COORDINATION DRAWINGS - NOT REQUIRED

END OF SECTION

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Section 01 33 01  
SUBSTITUTION REQUEST FORM

**Awarding Authority**

Fitchburg Housing Authority  
50 Day Street  
Fitchburg, MA 01420

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

**Creative Placemaking**

CJ Durkin Apartments (667-5)  
50 Day Street, Fitchburg, MA 01420

To: **ALLEN & MAJOR ASSOCIATES, INC.**

100 Commerce Way, Suite 5  
Woburn, MA 01801

We hereby submit for your consideration the following product as a substitution for the item specified for the above referenced project:

Drawing Number: \_\_\_\_\_ Drawing Title: \_\_\_\_\_

Specification Section: \_\_\_\_\_ Section Title: \_\_\_\_\_

Paragraph: \_\_\_\_\_ Specified Item: \_\_\_\_\_

Proposed Substitution: \_\_\_\_\_

Attach complete information on changes to Drawings and Specifications, including related work on other Drawings and under other Sections of the Specifications necessary for the proper installation of the proposed substitution, including proper coordination and finishing.

Submit with request complete Product Data, samples, and other data necessary to substantiate that the proposed item is equal to or exceeds the specified item in all respects. Include a comparison chart showing material features and properties of the specified item and the proposed substitute, paying particular attention to requirements specifically mentioned in the Specifications or shown on the Drawings, and guarantee/warranty information. Clearly mark manufacturer's literature to indicate equality in performance. In the case of operating equipment or systems, provide information as to servicing and maintenance requirements, and anticipated service life in the indicated application.

**Fill in the blanks below (attach additional sheets as necessary):**

- A. Does the substitute affect dimensions shown on the Drawings:    Yes    No  
(If yes, clearly indicate changes on enclosures)
- B. Will the undersigned pay for changes to the building design, including architectural /  
engineering detailing costs caused by the requested substitution:        Yes    No  
(If no, please explain)

C. What effect does the substitution have on other Contracts or other trades?

D. What effect does the substitution have on construction schedule?

E. Manufacturer's warranties of the specified and proposed items are:    Same  
Different  
Explain:

F. Itemized comparison of specified item with proposed substitute. Attach a detailed explanation.

G. This substitution will amount to a credit or extra cost to the Awarding Authority of:

No Cost Change

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

Add                     \$ \_\_\_\_\_         Dollars

Notes:

1. This submission shall be in accordance with Article 3.6.3.4 of the General Conditions.
2. The Awarding Authority's acceptance of any substitution will not change the Contract Price or Schedule unless the Awarding Authority and Contractor execute a Change Order in accordance with the terms and provisions of the Contract Documents.
3. Refer to Section 01 33 00 – SUBMITTAL PROCEDURES, for additional requirements for the submittal and processing of substitution requests.

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

Submitted By: \_\_\_\_\_  
Print Name / Title

Submitted By: \_\_\_\_\_  
Signature / Date

END OF FORM

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Section 01 50 00  
TEMPORARY FACILITIES

1.01 GENERAL REQUIREMENTS

- A. The Contractor shall be responsible for providing and maintaining all temporary facilities until Substantial Completion. Removal of such prior to Substantial Completion must be with the concurrence of the Prime Designer. The Contractor bears full responsibility for re-providing any facility removed prior to Substantial Completion.
- B. Removal of all temporary facilities shall be a condition precedent to Substantial Completion unless directed otherwise by the Prime Designer or specifically noted in the specifications.
- C. The Contractor must comply with all safety laws and regulations of the Commonwealth of Massachusetts, the United States Government, and local government agencies applicable to Work under this contract. The Contractor's attention is directed to the Commonwealth of Massachusetts, Department of Labor and Workforce Development Regulations.

1.02 FIELD OFFICE

- A. The Contractor shall provide a suitable field office at the site for use by the Contractor's personnel. The Contractor shall include any general services at the Site as specified herein and as required for proper and expeditious prosecution of Work. Unless otherwise specified, the Contractor shall pay for all temporary facilities and general services until Final Acceptance of the Work and shall remove same at completion of the Work. The Contractor shall be solely responsible for all cost associated with setup, maintenance, and removal of the field offices.
- B. All such services and facilities shall comply with applicable Federal, State, and local regulations.
- C. The Contractor shall make all connections to existing services and sources of supply, shall provide all necessary installations, labor, materials, and equipment. The Contractor shall remove temporary installations and conditions when no longer required and shall restore the services and sources of supply to proper operating condition.
- D. The Contractor shall be liable for discontinuance of any temporary service prior to the completion of the Work.

- E. Should a change in location of any temporary facility or equipment be necessary for the Work to progress properly, the Contractor shall remove and relocate such facility as required without additional cost to the Awarding Authority.
- F. The Contractor may make a written request to the Awarding Authority for space within an existing facility for used by the Contractor for the field office. The Awarding Authority has no obligation to make space available. If space is made available, the Contractor is responsible for maintaining the space in a clean and secure manner. If not, the Awarding Authority may request that the Contractor make other arrangements for the field office at no cost to the Awarding Authority.

### 1.03 PROJECT REPRESENTATIVE FIELD OFFICE - NOT USED

### 1.04 TEMPORARY TELEPHONES

- A. The Contractor shall provide phone service for the use of the Contractor's authorized personnel and Subcontractors at no cost to the Awarding Authority.

### 1.05 TEMPORARY TOILETS

- A. The Contractor shall provide and service an adequate number of toilet booths with chemical type toilets. The Contractor shall pay for the installation, service, and removal of the chemical type toilets.
- B. The toilets shall be erected in a location approved by the Awarding Authority and shall be maintained by the Contractor in a clean and orderly condition in compliance with all local and state health requirements.
- C. When the existing and/or new permanent sanitary system/facilities are in operating condition, the Contractor may request in writing to the Awarding Authority the use of the permanent sanitary system/facilities, provided that the Contractor agrees to the following provisions. (1) Assumes full responsibility for the used portions of the sanitary system; and (2) Pays all costs for operation, maintenance, cleaning, and restoring to original condition of used portions.
- D. If the Awarding Authority determines that the Contractor is not properly maintaining the permanent sanitary system/facilities, the Awarding Authority may prohibit the use of the permanent sanitary system/facilities and direct the Contractor to provide chemical type toilets.

### 1.06 TEMPORARY WATER

- A. The Contractor shall arrange with the local water department to obtain temporary water connections and shall pay costs thereby incurred. This includes the furnishing, installing, and removing of equipment and piping to provide water for the execution of the Work.
- B. The Contractor shall pay the cost of water consumed by trades until Substantial Completion.
- C. The Contractor shall provide an adequate supply of cool drinking water with individual drinking cups for personnel on the job.
- D. When the permanent water distribution system has been installed, it may be used as a source of water for construction purposes, provided that the Contractor agrees to the following provisions.
  - 1. Assumes full responsibility for the entire water distribution system.
  - 2. Pays for operation, maintenance, and restoration of the system.
  - 3. Temporary waterline connections to the permanent service, used by the Contractor and Subcontractors, shall be installed, protected, and maintained at the expense of the Contractor.
  - 4. At the substantial completion, the temporary water service equipment and piping shall be removed by the Contractor.
- E. Contractor may request in writing to the Awarding Authority the use of the available water supply at the Site for construction purposes and only if the water is not used wastefully.
- F. The Contractor shall provide all necessary piping and hoses to utilize the available sources of water.

#### 1.07 TEMPORARY ELECTRICITY

- A. The Contractor may make use of the electricity available at the site, metered and paid for by the Awarding Authority, provided that the Contractor shall supply proper adapters and extension cords.
  - 1. Where heavy duty electric equipment drawing current more than 15 amperes is involved, the Contractor shall provide temporary service to supply the power.
  - 2. The temporary electric service shall include, but not be limited to labor, materials, and equipment necessary to supply temporary power of adequate capacity for the project.
  - 3. Transformers and meters, when required by the power company, will be furnished by the power company and the Contractor shall pay the costs, therefore.
- B. Temporary electrical Work shall be performed under the direct supervision of at

least one master electrician, who will always be present on Site when such work is being performed.

- C. The General Contractor shall furnish, install, and maintain lamps in operating condition. The General Contractor, and each Subcontractor, shall furnish their own extension cords and additional lamps as may be required for their Work. Temporary work of a special nature, not otherwise specified hereunder, shall be provided, maintained, and paid for the trade requiring same.
- D. All lamps installed in permanent lighting fixtures and used as temporary lights during the construction period shall be removed and replaced shortly before Substantial Completion by the set of lamps required to be provided under the Electrical section of the specifications.
- E. All temporary work shall be provided in conformity with the National Electric Code, State laws, and requirements of the power company. Particular attention is called to Commonwealth of Massachusetts, Department of Labor and Workforce Development Regulations.
- F. The Electrical Subcontractor shall dismantle and completely remove from the project Site, temporary electrical facilities only when the permanent electrical system is operational and accepted by the Prime Designer.

#### 1.08 TEMPORARY HEAT - NOT USED

#### 1.09 TEMPORARY STRUCTURES AND MATERIAL HANDLING

- A. The Contractor shall provide storage sheds, temporary buildings, or trailers as required for the performance of the Contract. Subcontractors shall provide their own temporary buildings and trailers.
- B. Materials shall be handled, stored, installed, cleaned, and protected in accordance with the best practice in the industry and, except where otherwise specified in the Contract Documents, in accordance with manufacturer's specifications and directions.
- C. The Contractor must obtain the written permission from the Awarding Authority for the use of any storage facilities available on Site, but the Awarding Authority assumes no responsibility for articles stored.

#### 1.10 TEMPORARY STAGING, STAIRS, CHUTES



- A. Except as otherwise specified, the General Contractor shall furnish, install, maintain in safe condition, and remove all scaffolds, staging, and planking over 8 ft. in height, as required for the use of all trades for proper execution of the Work.
- B. The General Contractor shall furnish, install, maintain in safe condition, and remove all temporary ramps, stairs, ladders, and similar items as required for the use of all trades for the proper execution of the Work.
- C. Permanent stairs shall be erected as soon as possible, for which the General Contractor shall provide temporary protective treads, risers, handrails, and shaft protection.
- D. The General Contractor shall furnish, install, maintain, and remove covered chutes from openings in the exterior walls of upper floors for use by all trades unless otherwise specified. Such chutes shall be in convenient locations and permit disposal of rubbish directly into trucks or disposal units.
- E. Debris shall not be allowed to fall freely from upper levels of the building. Materials shall not be dropped from open windows.

#### 1.11 HOISTING FACILITIES

- A. Except as otherwise specified, the Contractor shall provide, operate, and remove material hoists, cranes, and other hoisting as required for the performance of the Work by all trades. All such hoisting service shall be without cost to the Subcontractors.
- B. Construction, maintenance, and operation of material hoists shall conform to applicable requirements of the "Standard Safety Code for Building Construction", ANSI, to Association of General Contractor's "Manual" requirements and to State and local regulations.

#### 1.12 TEMPORARY USE OF ELEVATOR - NOT AVAILABLE

#### 1.13 SECURITY OF THE WORK

- A. The Contractor shall be responsible for providing all security necessary to insure adequate protection of the Work and the Awarding Authority's interests until completion of the Work.
- B. Where excavation is involved, the Contractor shall be responsible for providing continuous watchmen service as necessary, to insure adequate protection of the public.

## 1.15 SPECIAL PROVISIONS

Contractor is responsible for porta potty

END OF SECTION

Section 01 50 10  
TEMPORARY PROTECTION AND CONTROLS

1.01 GENERAL PROVISIONS

- A. The site and building will be occupied during construction. The Contractor shall take all necessary precautions to ensure the public safety and convenience of the building occupants during construction.
- B. The Contractor shall always leave an unobstructed way along walks and roadways and shall maintain barriers and lights for the protection of all persons and property in all locations where materials are stored, or Work is in progress.
- C. The Contractor shall maintain the construction barriers and traffic barriers to accommodate the traffic (both pedestrian and vehicular) around the Work with the maximum of safety and practical convenience to such traffic until completion of the Work. The Contractor shall provide directional signs as required to properly control construction traffic at the Site.
- D. The Contractor shall protect all planting, landscaping, trees, and site improvements to remain.
- E. Any damage to buildings, roads (public and private), paved areas, fences, lawn areas, trees, shrubbery, poles, underground utilities, etc. shall be repaired and/or replaced at the Contractor's expense and to the satisfaction of the Awarding Authority.
- F. The Contractor shall patch, repair and/or replace all adjacent materials and surfaces damaged after the installation of new work at no expense to the Awarding Authority. All repair and replacement work shall match the existing in kind and appearance.
- G. When applicable, the Contractor shall remove all snow and ice that may impede the Work or safe access, damage the finishes or materials, be detrimental to workers, or impede trucking, delivery, or moving of materials at the Project Site, or prevent adequate drainage of the Site or adjoining areas.

1.02 TEMPORARY PROTECTION

- A. The applicable provisions of paragraph 1.02 shall apply to building and/or site projects.
- B. The Contractor shall:

1. Always protect excavations, trenches, buildings, and materials from rainwater, ground water, backing-up, or leakage of sewers, drains, or other piping, or from water damage of any origin. Provide all pumps, piping, coverings, and other materials and equipment as required by job conditions to accomplish this requirement.
2. In addition to the weather protection during the months of November to March specified elsewhere, provide temporary watertight enclosures for openings in exterior walls and in roof decks when and as required to protect the Work from damage by inclement weather. Temporary enclosures shall be provided with adequate means of ventilation to prevent accumulation of moisture in the buildings.
3. Provide temporary wood doors for exterior entrances and elsewhere as required. Permanent door enclosures shall not be used as temporary enclosures.
4. Protect sills, jambs, and heads of openings through which materials are handled.
5. Protect decks and slabs to receive work by other trades from any soiling which will prevent proper adhesion of subsequent Work. Decks and slabs shall be left clean and free of blemishes at the time other trades begin the application of their work.
6. Protect concrete slabs to remain exposed and finished floors against mechanical damage, plaster droppings, oil, grease, paint, or other material which will stain the floor finish. Install and maintain adequate strips of building paper or other protection on finished floors in areas where other trades will do future Work.
7. Protect all surfaces to receive Work by other trades from any soiling which will prevent proper execution of subsequent Work
8. Protect other areas, furniture, and private property of the Awarding Authority. Any areas damaged by the Contractor shall be restored to the original condition or compensated at the Contractor's expense.

C. Roof surfaces and waterproofed surfaces shall not be subjected to traffic, nor shall they be used for storage of materials. Where some activity must take place to carry out the Work, adequate protection must be provided.

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

E. The Contractor shall provide and maintain temporary fencing or barricades around the Work as may be necessary to assure the safety of all persons authorized or unauthorized. Such protective measures shall be located and constructed as required by local, state, and federal ordinances, laws, codes, or regulations. When construction site fencing is required, the Contractor shall

provide the following.

1. Construction fence shall be six (6) feet high and of chain link construction with 6-gauge wire at the top and the bottom of the fencing material, erected in a substantial manner, straight, plumb and true.
2. Gates shall be built into fence at such approved locations as are necessary, well cross-braced and hung on heavy strap hinges with proper post and hook for double gates. Provide heavy hasps and padlocks for each gate. Provide keys to Awarding Authority to facilitate emergency access by Awarding Authority's Security Forces and local Police and Fire Department.
3. All fencing shall be in accordance with local ordinances and shall be removed at such time before Final Acceptance. Restore site to acceptable condition after removing fence.
4. Provide scrim for fence with design approved and coordinated with the Awarding Authority.

#### 1.03 TEMPORARY HUMIDITY CONTROL (if applicable)

- A. The Contractor shall install equipment to monitor and regulate relative humidity as required for the installation of all interior products. Humidity control equipment shall include, but not be limited to, the following:
  1. Hygrometer: Provide one device to measure temperature and relative humidity in each construction area.
  2. Dehumidifier, as required to maintain humidity of enclosed areas below 70%.
  3. Fans: As required to eliminate significant variation in humidity levels within enclosed spaces.
- B. Schedule for Humidity Control: Relative humidity shall be maintained within the limits set by manufacturers of all interior materials and equipment. Refer to individual specification sections in Divisions 6, 9, 10, 11 and 12 for additional environmental requirements. No interior construction product shall be installed or applied prior to enclosure of building and installation of temporary humidity control measures.
- C. Within fourteen (14) calendar days after award of Contract, the Contractor shall submit in writing to the Prime Designer a humidity control plan.

#### 1.04 NOISE CONTROL

- A. The Contractor shall take special measures to protect the building tenants, neighbors and public from noise and other disturbances.
- B. Within fourteen (14) calendar days after the Notice to Proceed, the Contractor

shall prepare and submit to the Prime Designer a noise-abatement plan and enforce strict discipline over all personnel to keep noise to a minimum.

- C. Execute construction Work by methods and by use of equipment that will minimize noise.
- D. The Contractor shall not permit the use of radios or electronic entertainment equipment to be operated at volume that makes ordinary conversation difficult at ten (10) feet from such equipment.

#### 1.05 DUST CONTROL

- A. The Contractor shall take special measures to protect the building tenants, neighbors, and public from dust.
- B. Within fourteen (14) calendar days after the Notice to Proceed, the Contractor shall prepare and submit to the Prime Designer a dust mitigation plan and enforce strict discipline over all personnel to minimize dust generated at the Site.
- C. The Contractor shall maintain the Site, stockpiles, access, detour, and haul roads, staging and parking area used for the Work, free of dust that may cause a hazard or a nuisance to those at the Site, in the building or adjacent sites/buildings.
- D. Provide environmentally safe dust control materials and methods to minimize dust (interior and exterior) from construction operations and to prevent air-borne dust from dispersing into the atmosphere.
- E. Schedule operations so that dust and other contaminants resulting from the Work and cleaning process will not fall on wet or newly coated surfaces, including paint, coatings, sealants, caulking, adhesives.
- F. Furnish, erect, and maintain for the duration of the Work period, temporary fire-retardant dust proof coverings and partitions as required to prevent the spread of dust beyond the immediate area where Work is being performed.

#### 1.06 FIRE PROTECTION

- A. The Contractor shall take necessary precautions to insure against fire during construction. The Contractor shall be responsible to ensure that the area within Contract limits is kept orderly and clean and that combustible rubbish and construction debris is promptly removed from the site.
- B. Installation of equipment suitable for fire protection shall be done as soon as

possible after commencement of the Work. The Contractor's attention is directed to the requirements of the Commonwealth of Massachusetts, Department of Labor and Workforce Development Regulation 454 CMR.

- C. When an open flame is used inside a building or when required by the local Fire Department or the Awarding Authority, each contractor (trade) is solely responsible for providing and paying for a fire watch to perform the Work.

#### 1.07 WEATHER AND WIND PROTECTION

- A. The Contractor shall provide and pay for temporary enclosures and heat to permit Work to be carried on during the months of November through March in compliance with MGL c.149 §44G (d). These specifications are not to be construed as requiring enclosures or heat for operations that are not economically feasible in the opinion of the Awarding Authority. Without limitation, this includes such items as excavation, pile driving, steel erection, erection of certain exterior wall panels, roofing, and similar operations.
- B. "Weather Protection" means the temporary protection of that Work adversely affected by moisture, wind, and cold by covering, enclosing, and/or heating. This protection shall provide adequate working areas during the months of November through March as determined by the Awarding Authority and consistent with the construction schedule to permit the continuous progress of all Work necessary to maintain an orderly and efficient sequence of construction operations. The Contractor shall furnish and install "Weather Protection" material and be responsible for all costs, including heating required to maintain a minimum of 40 degrees F. at the working surface. This provision does not supersede any specific requirements for methods of construction, curing of materials, or the applicable conditions set forth in the Contract Documents with added regard to performance obligations of the Contractor.
- C. Within fourteen (14) calendar days after award of the Contract, the Contractor shall submit to the Prime Designer for approval, in writing, an electronic copy of the proposed methods for "Weather Protection".
- D. The Contractor shall assume the entire responsibility for weather protection during construction (until Substantial Completion) and shall be liable for any damage to any Work caused by failure to supply proper weather protection and proper ventilation.
- E. Work damaged by frost shall be removed and replaced by and at the Contractor's expense and as directed by the Prime Designer.
- F. The Contractor shall do no Work under any conditions deemed unsuitable by the Contractor to the execution of the Work. This provision shall not constitute any

waiver, release, or lessening of the Contractor's obligation to bring the Work to Substantial Completion within the period set forth in the Contract Documents.

- G. Whenever gale or high winds are forecast by the U.S. Weather Bureau, the Contractor shall take every precaution to minimize danger to persons, to the Work, and to the adjacent property.

1.08 PEST AND RODENT - NOT USED

1.09 SPECIAL PROVISIONS

Tree protection. Work adjacent to City sidewalks shall be protected and blocked off, as needed.

END OF SECTION



Section 01 50 20  
CLEANING

1.01 RELATED DOCUMENTS

- A. This section supplements Article 3.17 of the General Conditions.
- B. Consult the individual sections of the specifications for cleaning of Work installed under those sections.

1.02 CLEANING DURING CONSTRUCTION

- A. Conduct cleaning operations to comply with local ordinances and anti-pollution laws.
  - 1. Do not burn or bury rubbish and waste materials on the Site.
  - 2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
  - 3. Do not dispose of wastes into streams or waterways.
- B. Dispose of all materials in compliance with all applicable laws, ordinances, codes, and by-laws.
- C. Maintain the Work site free from accumulations of waste, debris, and rubbish.
- D. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- E. Provide on-site containers for collection of waste, debris, and rubbish.
  - 1. Cover containers as required to prevent material from blowing.
  - 2. Do not allow containers to overflow.
  - 3. Promptly remove containers when full.
- F. Buildings:
  - 1. Do not allow materials and rubbish to drop free or be thrown from upper floors but remove by use of a material hoist or rubbish chutes.
  - 2. Broom and/or vacuum clean interior areas when ready to receive painting and other finishes. Continue cleaning on an as-needed basis until Substantial Completion.
  - 3. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted or finished surfaces.

### 1.03 FINAL CLEANING

- A. Prior to submitting a request to the Prime Designer to certify Substantial Completion of the Work, the Contractor shall inspect all interior and exterior spaces and verify that all waste materials, rubbish, tools, equipment, machinery, and surplus materials have been removed, and that all sight-exposed surfaces are clean. Leave the Project clean and ready for occupancy.
- B. Unless otherwise specified in under other sections, the Contractor shall perform final cleaning operations as specified prior to final inspection. The Awarding Authority's responsibility for cleaning commences at Substantial Completion.
- C. General:
1. Employ experienced workmen or professional cleaners for final cleaning.
  2. Cleaning shall include all surfaces, interior and exterior, which the Contractor has had access to, whether new or existing.
  3. Use only cleaning materials recommended by the manufacturer of the surface to be cleaned.
  4. Use cleaning materials which will not create a hazard to health or property, and which will not damage surfaces.
  5. In cleaning items with manufacturer's finish or items previously finished by a Subcontractor, take care not to damage such manufacturer's or Subcontractor's finish.
  6. In cleaning glass and finish surfaces, care shall be taken not to use detergents or other cleaning agents which may stain adjoining finish surfaces.
  7. Any damage to finishes caused by cleaning operations shall be repaired at the Contractor's expense.
- D. Buildings: (if applicable)
1. Remove grease, mastic, adhesive, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior surfaces. This includes cleaning of the Work of all finishing trades where needed, whether cleaning by such trades is included in their respective specifications.
  2. Repair, patch, and touch up marred surfaces to the specified finish, to match adjacent surfaces.
  3. All broken or defective glass caused by the Contractor's Work shall be replaced at the Contractor's expense.
  4. Clean and polish all new and existing interior glass and glazing **on both sides** within the Work area.
  5. Clean all new and existing exterior glass and glazing **on both sides** within the Work area.
  6. Clean all new and existing plastic glazing (if applicable) **on both sides** within the Work area in accordance with the manufacturer's directions.
  7. Glass and glazing cleaning shall be completed by qualified window cleaners at the Contractor's expense just prior to acceptance of the Work.

8. Wash and polish all mirrors, if applicable.
9. Polish glossy surfaces to a clear shine.
10. Do the final cleaning of all flooring as specified under the respective sections of the Specifications.
11. Leave all architectural metals, hardware, and fixtures in undamaged, polished conditions.
12. Leave pipe and duct spaces, plenums, furred spaces and the like clean of debris and decayable materials.
13. Ventilating systems – Replace filters and clean ducts, blowers, and coils if units were operated during construction.

E. Site: (if applicable)

1. Remove all silt fencing, waddles, silt sacks and other erosion control devices used during construction unless otherwise specified.
2. Ensure that all catch basins, storm drains and trenches are clean and fully operational.
3. Broom clean exposed concrete surfaces and paved surfaces.
4. Clean all paved surfaces to remove dust, debris and stains resulting from the construction activity.
5. Clean vegetated, lawn, and mulched areas to remove all debris, rubbish, packing, and dead plant materials.
6. Remove all labels, tags, twine, cords and wrapping on trees, shrubs and plantings unless otherwise specified.
7. Remove grease, mastic, adhesive, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed exterior surfaces on signs, bollards, light posts, fixtures, furniture, site improvements, and accessories. This includes cleaning of the Work of all trades where needed, whether cleaning by such trades is included in their respective specifications.

#### 1.04 SPECIAL CLEANING REQUIREMENTS

Hardscape areas shall be swept upon construction completion. Drainage infrastructure shall be cleaned upon construction completion.

END OF SECTION

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Section 01 73 29  
CUTTING AND PATCHING

1.01 RELATED DOCUMENTS

- A. This section supplements Article 3.3 of the General Conditions.
- B. Consult the individual sections of the Specifications for specific items required under those sections.

1.02 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair Work required to restore surfaces to original conditions after installation of other Work.
- C. Coring: Any new penetration cut through existing or new construction using core drill and measuring no more than 6 inches in diameter or 6 inches by 6 inches. Larger cores are considered under cutting.

1.03 WORK INCLUDED

- A. Unless specified elsewhere, the Contractor shall be responsible for:
  - 1. All cutting and/or patching required for the project construction.
  - 2. Products and installation for patching and extending Work.
  - 3. Transition and adjustments.
  - 4. Repair of damaged surfaces, finishes, and cleaning
- B. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

1.04 RESPONSIBILITY FOR CUTTING AND/OR PATCHING

- A. General: All cutting and/or patching shall conform to the requirements of this Section, whether the work is to be done by the Contractor or Subcontractor.

1. Patching shall be performed to maintain the integrity of adjacent construction.
2. Patching shall be performed to maintain the integrity of the fire-rated construction at penetrations.
3. The mechanical and electrical contractors are responsible for cutting, capping and/or valving of the respective service to make the Work area safe during demolition and construction. All temporary shutdowns for establishing the necessary cross connections or tie-ins shall be fully coordinated with the Awarding Authority and Prime Designer in advance.
4. Contractors shall field cut all new penetrations through existing or new Work as close as practically possible to walls, floors, ceilings, and adjacent penetrations. Cored holes shall be no more than one inch (1") diameter greater than the pipe or conduit that is to pass through the hole. Cores two inches (2") and less shall be performed by Subcontractors. Cores greater than two inches (2") shall be performed by General Contractor.
5. The contractor that performed the core and penetration described in paragraph 3 above shall be responsible for patch the penetration unless otherwise specified.

B. Coordination: Unless otherwise specified, the General Contractor shall be responsible for the following:

1. All cutting and/or patching required for the Project construction.
2. Products and installation for patching and extending Work.
3. Transition and adjustments.
4. Repairing damaged surfaces, finishes and cleaning.
5. Obtaining locations and dimensions of penetrations required through walls and floors from trades requiring penetrations.
6. Coordinating penetrations with the requirements of other trades.
7. Forwarding locations and dimensions of requested penetrations to the trades responsible for performing the cutting and patching work.

C. Structural Elements: Do not cut or patch structural elements in a manner that will change their load-carrying capacity or load-deflection ratio.

D. Operational Elements: Do not cut and/or patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include but are not limited to the following:

1. Primary operational systems and equipment.
2. Air or smoke barriers.
3. Partitions and other construction required to provide acoustical separation.
4. Fire-suppression systems.
5. Mechanical systems piping and ducts.
6. Control systems.
7. Communication systems.

8. Conveying systems.
9. Electrical wiring systems.

E. Miscellaneous Elements: Do not cut and/or patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Miscellaneous elements include but are not limited to the following:

1. Water, moisture, or vapor barriers.
2. Membranes and flashings.
3. Exterior curtain-wall construction.
4. Equipment supports.
5. Piping, ductwork, vessels, and equipment.
6. Noise- and vibration-control elements and systems.

F. Visual Requirements: Do not cut and/or patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and/or patch construction exposed on the exterior or in occupied spaces in a manner that would, in Prime Designer's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut or patched in a visually unsatisfactory manner.

G. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting or patching operations, by methods and with materials so as not to void existing warranties.

H. Coring: All coring shall be performed by the trade requiring the new penetration.

## 1.05 EXAMINATION

- A. Examine surfaces to be cut and/or patched and conditions under which cutting and/or patching is to be performed before cutting, including elements subject to damage or movement during cutting and patching.
- B. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.
- C. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
- D. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- E. Beginning of cutting and/or patching means acceptance of existing conditions.

- F. After uncovering existing Work, assess conditions affecting performance of work.

## 1.06 PREPARATION

- A. Employ skilled workmen to perform cutting and/or patching. Proceed with cutting and/or patching at the earliest feasible time and complete without delay.
- B. Before proceeding, meet at the Project Site with parties involved in cutting and/or patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- C. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.
- D. Close openings in exterior surfaces to protect existing Work [and salvage items] from weather and extremes of temperature and humidity. Insulate duct work and piping to prevent condensation in exposed areas.
- E. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- F. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- G. Remove debris and abandoned items from area and from concealed spaces.
- H. Prepare surface and remove surface finishes to provide for proper installation of new Work and finishes.

## 1.07 CUTTING

- A. Execute all cutting and fitting necessary to complete the Work.
- B. Where services are required to be remove, relocated, or abandoned, by-pass utility services, such as pipe or conduit, before cutting. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.
- C. Uncover work to install improperly sequenced Work.



- D. Remove and replace defective or non-conforming Work.
- E. Provide openings in the Work for penetration of mechanical and electrical work. Cut holes and slots as small as possible, nearly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover opening when not in use.
- F. Employ skilled and experienced workers to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- G. Cut rigid materials using power saw or core drill. Cut through concrete and masonry using a cutting machine, such as a Carborundum saw or a diamond-core drill. Pneumatic tools shall not be allowed without prior approval.
- H. Cut existing construction using methods least likely to damage elements retained or adjoining construction. Where possible, review proposed procedures with the original Installer; comply with the original Installer's recommendations.
- I. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
- J. Comply with requirements of applicable Division 31- Earthwork sections where cutting and patching requires excavating and backfilling.
- K. Do not cut structural elements in a manner that will change their load-carrying capacity or load-deflection ratio.
- L. Do not cut operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.

## 1.08 PATCHING

- A. Execute patching to complement adjacent and undisturbed finishes.
- B. Fit products together to integrate with other Work.
- C. Execute Work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.
- D. Restore Work with new products in accordance with requirements of Contract Documents.
- E. Fit work tight to pipes, sleeves, ducts, conduit, and other penetrations through

surfaces.

- F. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with appropriate material to full thickness of the penetrated element as necessary to maintain the required rating.
- G. Where new Work abuts or aligns with existing, perform a smooth and even transition. Patch work to match existing adjacent work in texture and appearance. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
- H. Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used. Use materials whose installed performance will equal or surpass that of existing materials.
- I. Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
- J. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
- K. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
- L. Where walls or partitions are to be removed, patch and repair voids left in floor, wall, and ceiling surfaces where the existing construction is removed. Provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
- M. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch after the area has received primer and second coat.
- N. Patch, repair, or re-hang existing ceilings as necessary to provide an even- plane surface of uniform appearance.
- O. Refer to applicable Sections of Division 9 for finish requirements.

## 1.09 CLEANING

- A. In addition to cleaning specified in Section 01 50 20, clean all areas affected by the Work of this Section.

- B. Completely remove paint, mortar, oils, putty, and similar items.
- C. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

#### 1.10 SPECIAL PROVISIONS

Clean cuts.

END OF SECTION

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Section 01 74 19  
CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT

1.01 GENERAL

- A. This section describes the requirements for the Contractor and all subcontractors to minimize construction waste and debris and to reuse, salvage, and recycle to the greatest extent possible.
- B. This section specifies certain wastes that are required to be recycled.
- C. This section includes a standard Waste Management Report Template (01.74.19.01)

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Related Sections include the following:
  - 1. Section 01 29 00 Payment Procedures.
  - 2. Section 01 33 00 Submittals Procedures.
  - 3. Section 01 77 00 Project Closeout Procedures and record drawings.

1.03 WASTE MANAGEMENT GOALS

- A. The Awarding Authority's waste management goals include increased recycling and conservation of materials. Construction and Demolition Wastes have been identified as a particular target for reuse and recycling, for several reasons.
- B. Recycling is required for each of the following materials if that material is expected to be part of the project's demolition and/or construction waste:

List of Items: NONE

1.04 PRE-CONSTRUCTION WASTE MANAGEMENT REPORT SUBMITTAL

- A. Prior to any waste removal, the Contractor shall submit a completed Draft Waste Management Report (01.74.19.01) to the Prime Designer for review.
- B. The following databases may be used to find recyclers/haulers for construction debris.

1. Massachusetts Department of Environmental Protection  
[www.Mass.gov/DEP/recycle](http://www.Mass.gov/DEP/recycle).
2. The GSA Environmental Strategies and Safety  
[www.wbdg.org/tools/cwm.php](http://www.wbdg.org/tools/cwm.php).
3. Recycling Works MA [www.recyclingworksma.com](http://www.recyclingworksma.com).  
Searchable web-based directories of recycling facilities for common construction materials as well as re-purposing materials with remaining useful life, such as structurally sound kitchen cabinets, fixtures, appliances, doors, and windows. For specified guidance on a material not yet listed in the directory, contact one of the recycling advisors <mailto:info@recyclingworksma.com> or by calling hotline at (888) 254-5525.
4. For statewide contract recycling vendors with bona fide capabilities for porcelain (toilets) recycling:  
**New England Recycling (Taunton):** Email: [kbrady@nerecycling.com](mailto:kbrady@nerecycling.com) Phone: (508) 813-1278,  
**EOMS Recycling Services (Brockton):** Email: [dmilhomme@eomsrecycling.com](mailto:dmilhomme@eomsrecycling.com) Phone: (508) 587-9686,  
**Republic Services (Auburn):** Website: <http://www.republicservices.com> Phone: (508) 721-2314,  
**ACME Recycling (Springfield):** Website: [www.acmerecoycling.com](http://www.acmerecoycling.com) Phone: (413) 737-3112, and  
**ABC Disposal Service (New Bedford):** Website: [abcdisposal.com](http://abcdisposal.com) Phone: (774) 930-8989.

#### 1.05 PRE-CONSTRUCTION WASTE MANAGEMENT REPORT

- A. The Contractor's Pre-Construction Waste Management Report submittal shall be reviewed as part of the submittal process. The Contractor's submittal portion may be handwritten.
- B. The Report shall include a summary of the proposed jobsite wastes to be generated, including types and approximate quantities of each material.
  1. Disposal options: The name of all landfills and/or incinerators proposed for trash disposal.
  2. In addition to the information provided on the Report Form, provide supplemental information advising the Prime Designer of the following:
    - a. Materials Handling Procedures: A brief description of how the Contractor proposes separating and stockpiling materials on site. What materials will be separated and how will they be temporarily stored.
    - b. Transportation: A description of the means of transportation of the recyclable materials (whether materials will be site-separated and hauled to designated markets, or whether mixed materials will be collected by a hauler and removed from the site and later separated for recycling). See the template (Form 01.74.19.01) at the end of this section.

## 1.06 WASTE MANAGEMENT IMPLEMENTATION

- A. Manager: The Contractor shall designate a specific person responsible for explaining the procedures for project recycling to Contractor's personnel and new workers. This person should also manage and coordinate all transportation of waste to recyclers and landfills and maintain records of materials leaving site and destinations.
- B. Clearly marked containers or areas to identify where different materials are to be stored.

## 1.07 REPORTING REQUIRED AT TIME OF APPLICATION OF PAYMENT

- A. The Schedule of Values shall include at least one line item representing the Waste Management requirements for this Contract.
- B. Application for Progress Payments: The Contractor shall submit with each Application for Progress Payment a Summary of Waste generated by the Project.
- C. Failure to submit this information shall render the Application for Payment incomplete and shall delay Progress Payments. The Summary shall be submitted on a form acceptable to the Awarding Authority and shall contain the following information:
  - 1. For each material recycled, reused, or salvaged from the Project, the amount (in tons or cubic yards), the date removed from the jobsite and the receiving party, Attach manifests, weight tickets, etc.
  - 2. The amount (in tons) of material landfilled from the Project, the location of the landfill, and delivery manifests, weight tickets, etc.
- D. The Prime Designer's receipt and approval of all required Waste Management documentation shall be required for Final Payment.

## 1.08 REQUIRED WASTE MANAGEMENT FORM

- A. The following form is included as part of Section 01 74 19.
  - 1. Pre-Construction Waste Management Report Form 017419.01.

END OF SECTION

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REPORT 017419.01  
Pre-Construction Waste Management Report Form

<b>Mandatory Waste Management Report</b>					
Material Category		Disposed in Municipal Solid Waste Landfill	Diverted from Landfill By:		
			Recycling	Salvage	Reuse
<b>Materials where Recycling is Mandatory in this Contract</b>					
1	Concrete, concrete blocks and masonry units (CY)				
2	Uncoated asphalt, bricks, and concrete (CY)				
3	Packaging and packing materials (lbs.)				
4	Fiber cement products including shingle and lapped siding, panels, etc. (lbs.)				
5	Paint (gal)				
6	Glass (lbs.)				
7	Plastics (lbs.)				
8	Furnishings (type and quantity)				
9	New Carpet & pad constr. scraps(sq. yds)				
	Used clean Carpet and pad				
10	Insulation (lbs.)				
11	Gypsum wallboard (lbs.)				
12	Porcelain plumbing fixtures (lbs.) or (number of fixtures)				
13	Clean dimensional wood (lbs.)				
14	Ferrous Metals (lbs.)				
15	Non-ferrous metals (lbs.)				
16	Fluorescent light tubes				
17	Roofing Shingles or sheet plies(lbs.)				
18	Green materials (land clearing debris, tree trimming etc. (lbs.)				
19	Loam- (test before shipping off site)				
20	Add any other materials:				
21					
22					
23					
24					
25					

**Total (in Weight/Quantity Above):**

This Form should be Stamped and Signed as approved by the Contractor before submitting to the Prime Designer.

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Section 01 77 00  
PROJECT CLOSEOUT PROCEDURES

1.01 RELATED DOCUMENTS

- A. This section supplements the General Conditions.
- B. Consult the individual sections of the specifications for specific items required under those sections.

1.02 OCCUPANCY PERMIT

- A. The Contractor shall coordinate the efforts of all Subcontractors and obtain the signed permit and/or Certificate of Occupancy (if applicable) from the jurisdiction having authority as specified in Article 8.6.1 of the General Conditions.

1.03 PARTIAL COMPLETION

- A. The Awarding Authority may take partial occupancy of the Work area as specified in Article 8.5 of the General Conditions.
- B. If partial occupancy is requested, the Prime Designer shall conduct a thorough inspection of the Work. If the area is actively occupied, this inspection shall occur within 24 hours of any written request. The Prime Designer shall prepare a punch list, setting forth in accurate detail any items and additional items that are not acceptable or incomplete inside the building/area. The Contractor shall coordinate all Subcontractors to achieve prompt completion of the punch list.
- C. Reference Article 8.6.2 of the General Conditions: Prior to requesting Prime Designer's inspection, the Contractor shall make a thorough inspection of the Work. During this inspection, the Contractor shall prepare a comprehensive list of all items remaining to be completed or corrected. This list shall include all remaining Contractor and Subcontractor items to be provided under the Contract Documents.

1.04 SUBSTANTIAL COMPLETION

- A. When in the opinion of the Contractor the Work is substantially complete, the Contractor shall follow the procedures as specified in Article 8.6 of the General Conditions.
- B. At Substantial Completion, the Contractor shall submit to the Prime Designer the following items:

1. Operating and maintenance data.
2. Schedule for training and instruction on new fire protection, plumbing, mechanical and electrical systems.
3. Guarantees and warranties as specified.
4. Keys and keying schedule.
5. Spare parts and maintenance materials as specified.
6. Roofing guarantee and flashing endorsement as specified.
7. Evidence of compliance with requirements of governing authorities.
8. Punch list with schedule.
9. Complete set of marked up Final Record Drawings. The Contractor shall check all marked up record drawings prepared by Subcontractors and certify in writing on the title sheet of the drawings that they are complete and correct, prior to submission to the Prime Designer.

#### 1.05 TRAINING AND INSTRUCTIONS

- A. As required in the Contract Documents and prior to final payment and completion, the Contractor and Subcontractors shall instruct the Awarding Authority's personnel on-site, in the use and maintenance of equipment installed under the Contract (if applicable).
  1. The intent is to provide detailed instruction and to educate the Awarding Authority's on-site personnel on the proper use of the equipment.
  2. The instruction shall be provided by a qualified trainer, who is also a manufacturer's certified technician, with expertise in the specific system or equipment for which training is required. In some cases, the training may require more than one visit by those responsible for the instruction.
  3. The Contractor and specifically, the Plumbing, Heating and Ventilating, and Electrical Subcontractors shall not assume that the Awarding Authority's personnel possess special expertise or have any previous experience whatsoever in the operation and maintenance of mechanical and electrical equipment.
  4. Submit the schedule for instructional training in writing to the Awarding Authority. Do not proceed with instruction until the Awarding Authority has approved the schedule.
  5. Refer to specific technical sections for additional requirements specific to equipment and systems.
  6. For major items of mechanical and electrical equipment, instructions and demonstrations shall be performed during the initial start-up period and, if necessary, during one or more return visits as may be required.
  7. Provide video recording of all training sessions.
- B. The Contractor shall submit in writing to the Prime Designer a certificate of compliance with the training requirements, signed by the Contractor and the Awarding Authority's representative, as a condition of final payment.

## 1.06 RECORD DRAWING PROCEDURES DURING CONSTRUCTION

- A. The Contractor shall maintain one (1) full-size set of drawings for record purposes.
- B. The Contractor and the Subcontractors shall keep the marked-up “As-Built” record drawings on the site at all times and note on it in colored ink (neatly and accurately) at the end of each working day, the exact location of the work as actually installed. The mark-ups shall include the following.
  - 1. The location and dimensions of underground and concealed Work, and any architectural, mechanical, or electrical variations from the Contract Drawings.
  - 2. All changes, including those issued by Addendum, Change Order, or instructions by the Prime Designer shall be recorded.
- C. Marked-up As Built record drawings shall be prepared for the entire Project and include all Work. The mark-ups shall include, but not limited to, the following.
  - 1. The location of all underground utilities and appurtenances referenced to permanent surface improvements, both horizontally and vertically at ten (10) foot intervals and at all changes of direction.
  - 2. The location of all internal utilities and appurtenances, concealed by finish materials, including but not limited to valves, coils, dampers, vents, cleanouts, strainers, pipes, junction boxes, turning vanes, variable and constant volume boxes, ducts, traps, and maintenance devices.
  - 3. The location of these items shall be shown by offsets to structure and drawing grid lines.
- D. The tolerance for the actual location of these items on the marked-up As-Built record drawings shall be plus or minus two (2) inches.
- E. Each item shall be referenced by showing a tag number, areas served, and function on the marked up As Built record drawing.
- F. The Prime Designer may periodically inspect the marked-up As-Built record drawings at the site. The proper and current maintenance of the information required on these drawings shall be a condition precedent to approval of the monthly applications for payment.

## 1.07 FINAL RECORD DRAWINGS

- A. Final Record Drawings shall consist of all the Contract Drawings.
- B. At substantial completion and prior to final payment and completion, the Contractor shall provide one full size set and one electronic copy (PDF format) of the Final Record Drawings (as- built). The Contractor shall transcribe all previously recorded information from the Record Progress Drawings and ensure

that all trades properly annotated all modifications or deviations from the Contract Drawings.

1. The annotated drawings shall include all addenda, sketches, field directives, change orders or other Work issued during construction.
  2. Shop drawings will not be accepted as Final Record Drawings.
- C. The Contractor shall check all marked-up record drawings prepared by Subcontractors and shall certify in writing on the title sheet of the drawings that the drawings are complete and correct, prior to submission to the Prime Designer.
- D. The Contractor shall submit the Final Record Drawings to the Prime Designer. The Prime Designer shall incorporate all changes onto the original drawings.
- E. The Prime Designer shall be the sole judge of the acceptability of the Final Record Drawings.

## 1.08 FINAL SURVEYS

- A. Building Foundations (if applicable): At the completion of foundations, the Contractor shall furnish to the Awarding Authority a survey, signed by a Land Surveyor or Engineer registered in Massachusetts, certifying that the location of the building(s) and the principal lines, levels, and dimensions of the buildings are accurately established in accordance with the drawings.
1. The drawing shall be the same size as the other drawings in the Contract Documents.
  2. The Contractor shall submit two (2) hard copies and one (1) electronic media copy of utility drawing(s) in both PDF and DWG (CADD) format.
- B. Utilities (if applicable): At completion of construction, the Contractor shall furnish to the Awarding Authority record drawings of both subsurface and overhead utilities (new and existing) installed and/or impacted by the Work.
1. The record drawings shall include the size, type, depth, inverts, and location of the utilities including tees, shut-off valves, hand holes, manholes, catch basins, meters, vaults, duct banks, and other information.
  2. If a septic system is installed and required by the local governing official, the Contractor shall provide a certified plan showing the installed location of the septic system components. The survey shall be prepared by a Land Surveyor or Engineer, registered in Massachusetts, at no additional cost to the Awarding Authority.
  3. The drawings shall be the same size as the other drawings in the Contract Documents.
  4. The Contractor shall submit two (2) hard copies and one (1) electronic media copy of utility drawing(s) in both PDF and DWG (CADD) format.

- C. Paved Surfaces (if applicable): At completion of construction, the Contractor shall furnish to the Awarding Authority record drawings of all paved surfaces installed and/or impacted by the Work.
1. The record drawings shall include the spot elevations of all elevation changes including steps as well as high and low points reflecting the drainage patterns. The record drawings shall also reflect the type of paving and the thickness of the paving and subbase.
  2. The drawing(s) shall be the same size as the other drawings in the Contract Documents.
  3. The Contractor shall submit two (2) hard copies and one (1) electronic media copy of utility drawing(s) in both PDF and DWG (CADD) format.

## 1.09 RECORD SUBMITTALS AND CLOSEOUT DOCUMENTS

- A. Prior to final payment and completion and if requested by the Awarding Authority, the Contractor shall collect and submit two (2) hard copy complete sets (three ring binders) and one electronic copy (PDF format) of all the record documents. Each subcontractor (trade) shall be responsible for compiling and providing the required closeout documents to the Contractor for their Work (trade). The sets shall be organized logically, properly labeled, and include the following documents.
1. Final project directory.
  2. Copy of the final signed permit and Certificate of Occupancy (if applicable).
  3. Copy of the Certificate of Substantial Completion.
  4. All warranties by the individual trades.
  5. All manufacturer warranties as specified.
  6. All record submittals with the action taken by the Prime Designer.
  7. All Operation and Maintenance Manuals: Maintenance manuals shall consist of manufacturer's catalog cuts with descriptive information, lubricating and maintenance instructions, parts lists, usage instructions, names, addresses and telephone numbers where replacement parts and service can be quickly obtained, and all other information required for the Awarding Authority to use, maintain, and service the items properly.
  8. Final surveys, if applicable.
- B. Subcontractors, installers, and suppliers shall furnish to the Contractor two sets of operating and maintenance instructions manuals of all mechanical, electrical, and manually operated equipment furnished and installed under the Contract.
- C. The Contractor shall submit the complete sets of record documents to the Prime Designer to review for completeness and the Prime Designer will deliver the sets to the Awarding Authority.

## 1.10 FINAL COMPLETION

- A. The Contractor's attention is directed to Article 8.7.
- B. Partial Release of Retainage:
1. If within 60 days after Substantial Completion, any of the items on the Prime Designer's punch list are not complete or if the Contractor has not provided the appropriate marked up As Built Drawings, operating manuals, warranties, guarantees, record submittals or spare parts, the Prime Designer shall assign a monetary value for each incomplete item as well as any other items as provided by M.G.L. c.30 §39K, and the Prime designer shall prepare a Certificate for Partial Release of Retainage.
  2. If the Prime Designer is required to prepare a Certificate for Partial Release of Retainage, the Contractor shall complete all remaining Work in accordance with the provisions of Article 8.7 of the General Conditions.
  3. The Contractor may make a request for additional releases of retainage when portions of the Work listed on the Prime Designer's punch list have been satisfactorily completed. Each request shall be accompanied by a new application for payment and a signed and notarized Certificate for Partial Release of Retainage.
  4. The Prime Designer's inspections, required to complete the additional payment applications described in subparagraph above, are subject to provisions of Article 8.7.5 of the General Conditions.
  5. Upon completion of all remaining items, the Final Release of Retainage shall be processed in accordance with provisions above in this paragraph.
- C. Full Release of Retainage:
1. Upon completion of all Work and after receipt of all appropriate marked up As Built Drawings, operating manuals, warranties, guarantees, record submittals and spare parts required by the Contract Documents, the Prime Designer shall prepare the Certificate of Final Completion.
  2. The Contractor shall provide a final Application for Payment to complement the close-out process.

## 1.11 REQUIRED CLOSE OUT FORMS

- A. The following forms are included as part of Section 01 77 00.
1. Certificate of Substantial Completion 017700.01.
  2. Certificate for Partial Release of Retainage 017700.02.
  3. Certificate of Final Completion 017700.03.

END OF SECTION



# CERTIFICATE OF SUBSTANTIAL COMPLETION

COMMONWEALTH OF MASSACHUSETTS  
Executive Office of Housing and Livable Communities

Contractor _____	Owner _____	Housing Authority _____
_____	_____	_____
Phone _____	Phone _____	
Fax _____	Fax _____	
Development No _____	FISH No _____	
Contract for: _____		

Pursuant to the General, Supplementary, and Special Conditions of the Contract Documents relative to Partial or Total Occupancy, you are hereby notified that the Housing Authority has satisfied itself that the portion(s) of the above mentioned project, as hereinafter enumerated, is (are) ready for use and or occupancy:

Identify the Buildings and/or areas to be occupied and or used: \_\_\_\_\_

The Housing Authority, through its undersigned representative hereby accepts from the Contractor, subject to contract stipulations, said portion(s) of the Project, effective 12:00 Noon on:

**INSERT DATE**  the \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_

The Contractor will be relieved of responsibility for performing further Work or supplying further materials, equipment, or other items, in accordance with the General, Supplementary, and Special Conditions of the Contract Documents (relative to partial or total occupancy), except for the following work:

*Append a complete list of all incomplete and/or unsatisfactory items of the Work, which in the opinion of this Housing Authority, are attributable to the fault, negligence, or oversight of the of the Contractor, any subcontractors, material suppliers, agents, servants, or employees.*

**NOTE: Attach one copy of the "Punch List" items to each copy of this document.**

The Use or Occupancy of the building(s) or portion(s) of this project by the Housing Authority shall not:

- constitute acceptance of any Work not performed in accordance with the Contract Documents;
- relieve the Contractor of the liability to perform any Work required by the Contract but not completed at the time of Use and or Occupancy; nor
- relieve the Contractor of liabilities with respect to any express warranties or guarantees required by the Contract.

### CERTIFICATION OF HOUSING AUTHORITY BOARD VOTE

**Must be completed by the Awarding Authority**

The \_\_\_\_\_ Housing Authority met on \_\_\_\_\_ And voted to approve this Certificate:

Certified By: \_\_\_\_\_, Contract Officer

#### Approved: Prime Designer

Firm: \_\_\_\_\_

By: \_\_\_\_\_

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

#### Reviewed: Construction Advisor

EOHLC

By: \_\_\_\_\_

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

#### Accepted: Contractor

Firm: \_\_\_\_\_

By: \_\_\_\_\_

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

#### Approved: Director, Construction Management Unit

EOHLC

By: \_\_\_\_\_

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

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# CERTIFICATE FOR PARTIAL RELEASE OF RETAINAGE

COMMONWEALTH OF MASSACHUSETTS

Executive Office of Housing and Livable Communities *This form should originate with the Prime Designer*

Contractor _____	Owner: _____	Housing Authority _____
_____	_____	_____
Phone _____	Phone _____	_____
Fax _____	Fax _____	_____
Development No _____	Period Ending _____	_____
Contract for: _____	EOHCL No: _____	_____

### THE PARTIES AGREE THAT THE STATUS OF THE CONTRACT IS AS FOLLOWS:

#### I. CONTRACT TIME

- The Date of Substantial Completion is ..... \_\_\_\_\_
- The Date of Substantial Completion as Extended by Change Order is ..... \_\_\_\_\_
- The Actual Date of Substantial Completion is:..... \_\_\_\_\_
- Overrun in Contract Time \_\_\_\_\_

#### II. CONTRACT SUM

- The Original Contract Sum is ..... \$ \_\_\_\_\_
  - The Sum of Approved Change Orders to Date is ..... \$ \_\_\_\_\_
  - The Adjusted Contract Sum is ..... \$ \_\_\_\_\_
- LESS:**
- Sum of authorized payments to date: ..... \$ \_\_\_\_\_
  - Sum of Moneitized Punch List..... \$ \_\_\_\_\_
  - Sum of other claims by Awarding Authority..... \$ \_\_\_\_\_

III. THAT APPLICATION FOR PAYMENT NO. \_\_\_\_\_ ISSUE & PAYABLE IN THE AMOUNT OF: \$ \_\_\_\_\_

### THE UNDERSIGNED CONTRACTOR HEREBY CERTIFIES THAT: *The Contractor should complete items 1-5 and certify below*

- All Work, including work required under change order(s) has been performed in accordance with the terms of the Contract.
- All changes to the Work (except minor modifications and field adjustments) have been authorized in writing by the Awarding Authority.
- All laborers and mechanics have been paid at least the minimum wage rates as set forth in the Contract, and
- There have been no claims made for infringement of any patent.
- By accepting the payment shown in line III the Contractor releases the Awarding Authority from any and all claims arising under the Contract except for those set forth in A-B below. However if the Awarding Authority does not pay the Contractor the full amount of the payment shown above, such reduction shall not affect the validity of this release. Rather, the amount not paid shall be considered as another claim asserted by the Contractor.

#### EXCEPTIONS: CONTRACTOR'S CLAIMS AGAINST OWNER

- \_\_\_\_\_
- \_\_\_\_\_

#### CERTIFIED: CONTRACTOR

In witness Whereof the Undersigned has signed and sealed this Instrument this \_\_\_\_\_ day \_\_\_\_\_ 20

Firm: \_\_\_\_\_

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

Title: \_\_\_\_\_

State of \_\_\_\_\_ County of \_\_\_\_\_ On this \_\_\_ day of \_\_\_\_\_ 20

before me, the undersigned notary public, \_\_\_\_\_ personally appeared, proved to me through satisfactory evidence which was \_\_\_\_\_ to be the person whose name is signed on this document in my presence.

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

My Commission Expires: \_\_\_\_\_

#### CERTIFICATION OF HOUSING AUTHORITY BOARD VOTE:

The \_\_\_\_\_ Housing Authority met on \_\_\_\_\_ And voted to approve this Certificate and Payment

Certified: \_\_\_\_\_, Contract Officer

#### APPROVED: Prime Designer

Firm: \_\_\_\_\_

By: \_\_\_\_\_

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

#### REVIEWED: CONSTRUCTION ADVISOR

EOHLC

By: \_\_\_\_\_

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

#### APPROVED: DIRECTOR CONST. MANAGEMENT UNIT

EOHLC

By: \_\_\_\_\_

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

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# CERTIFICATE OF FINAL COMPLETION

COMMONWEALTH OF MASSACHUSETTS

Executive Office of Housing and Livable Communities *This form should originate with the Prime Designer*

Contractor _____	Owner: _____	Housing Authority _____
_____	_____	_____
Phone _____	Phone _____	
Fax _____	Fax _____	
Development No _____	Period Ending _____	
Contract for: _____	EOHLC No; _____	

**THE PARTIES AGREE THAT THE STATUS OF THE CONTRACT IS AS FOLLOWS:**

**I. CONTRACT TIME**

- The Date of Substantial Completion is.....
- The Date of Substantial Completion as Extended by Change Order is.....
- The Actual Date of Substantial Completion is:.....
- Overrun in Contract Time .....

**II. CONTRACT SUM**

- The Original Contract Sum is ..... \$
- The Sum of Approved Change Orders to Date is..... \$
- The Adjusted Contract Sum is ..... \$

**LESS:**

- Sum of authorized payments to date:..... \$
- Sum of other claims by Awarding Authority..... \$

**III. THAT APPLICATION FOR PAYMENT NO. \_\_\_\_\_ IS DUE & PAYABLE IN THE AMOUNT \$ \_\_\_\_\_**  
OF: \_\_\_\_\_  
Copy Attached

**THE UNDERSIGNED CONTRACTOR HEREBY CERTIFIES THAT:** *The Contractor should complete items 1-5 and certify below*

- All Work, including work required under change has been performed in accordance with the terms of the order(s) Contract.
- All changes to the Work (except minor modifications and field adjustments) have been authorized in writing by the Awarding Authority.
- All laborers and mechanics have been paid at least the minimum wage rates as set forth in the Contract, and
- There have been no claims made for infringement of any patent.
- By accepting the payment shown in line III the Contractor releases the Awarding Authority from any and all claims arising under the Contract

**CERTIFIED: CONTRACTOR**  
 In witness Whereof the Undersigned has signed and sealed this Instrument this \_\_\_\_\_ day of \_\_\_\_\_ 200\_\_\_\_

Firm: \_\_\_\_\_  
 By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title: \_\_\_\_\_

State of \_\_\_\_\_ County of \_\_\_\_\_ On this \_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_  
 before me, the undersigned notary public, \_\_\_\_\_ personally appeared,  
 proved to me through satisfactory evidence which was \_\_\_\_\_ to  
 be the person whose name is signed on this document in my presence.  
 Notary Public: \_\_\_\_\_  
 My Commission Expires: \_\_\_\_\_

**CERTIFICATION OF HOUSING AUTHORITY BOARD VOTE:**

The \_\_\_\_\_ Housing Authority met on \_\_\_\_\_ And voted to approve this Certificate and Payment

Certified: \_\_\_\_\_ Contract Officer

<b>APPROVED: Prime Designer</b> Firm: _____	<b>REVIEWED: CONSTRUCTION ADVISOR</b> EOHLC	<b>APPROVED: DIRECTOR CONST. MANAGEMENT UNIT</b> EOHLC
By: _____ Date: _____	By: _____ Date: _____	By: _____ Date: _____

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SECTION 02 40 00

DEMOLITION

**1.0 GENERAL**

1.1 SCOPE

This work shall include the demolition of pavements, walks, and removal of materials from the Site. Work shall also include sub-grade backfilling of voids created as a result of demolition and regrading.

1.2 REFERENCES

The publications listed below are related sections and are to be referenced as part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

Building Demolition Specifications

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.6 (1990) Demolition Operations

AIR-CONDITIONING AND REFRIGERATION INSTITUTE (ARI)

ARI Guideline K(1997) Containers for Recovered Fluorocarbon Refrigerants

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 61-SUBPART M National Emission Standard for Asbestos

40 CFR 82 Protection of Stratospheric Ozone; Refrigerant Recycling

49 CFR 173.301 Shipment of Compressed Gas Cylinders

COMMONWEALTH OF MASSACHUSETTS STATE BUILDING CODE

Section 116.0 Demolition

1.3 EXISTING CONDITIONS

Structural and Site conditions shall be verified by the Contractor prior to proceeding with demolition work. Field verify the accuracy of the Specifications for miscellaneous details and inspect structures and utilities prior to the start of work and notify the Engineer, in writing, of any hazardous conditions and/or discrepancies.

#### 1.4 GENERAL REQUIREMENTS

Perform all work in accordance with ANSI A10.6, applicable construction safety and health regulations, federal and local rules and regulations. Do not begin demolition until authorization is received from the Engineer. Remove rubbish and debris from the project site daily; do not allow accumulation inside or outside of the buildings. Store materials that cannot be removed daily in areas specified by the Engineer. The removal of materials containing asbestos, PCB's, Mercury and other hazardous materials shall be coordinated with the environmental engineer.

#### 1.5 DEFINITIONS

##### 1.5.1 CLASS I AND CLASS II OZONE DEPLETING SUBSTANCE (ODS)

Class I and Class II ODS is defined in Section, 602(a) and (b), of The Clean Air Act.

##### 1.5.2 DEMOLITION

Demolition shall be defined as the removal and disposal of existing fencing, retaining walls, foundations, concrete slabs and footings, asphalt paving, electrical features, and associated appurtenances to the limits described in these specifications and as directed by the Owner or Engineer.

#### 1.6 SUBMITTALS

Submit the following to the Owner prior to the commencement of any work.

##### Certificates

###### Demolition plan:

Submit proposed demolition plan that includes detailed schedule and phasing for all demolition.

###### Notification of Demolition forms:

Submit copies of all notification forms to the Engineer one week prior to the start of demolition activities. These shall include all federal, state and local notifications as required.

##### Disposal/Recycling Facility Information:

Submit the proposed disposal/recycling facility information for each waste stream anticipated for removal from the site within the bid submittal. Each bidder is required with their bid to provide the name, address, phone number and contact person to each facility that a waste stream is anticipated to be delivered from the site. An alternate location for each waste stream is allowable and the information for the facility should also be provided with the bid.

Submit the following to the Engineer at the completion of the work.

##### Closeout Submittals

###### Receipts:

Submit a shipping receipt or bills of lading for all waste materials removed from the Site. This shall include all materials shipped off site for salvage and recycling purposes.



## 1.7 REGULATORY AND SAFETY REQUIREMENTS

Comply with federal, state, and local hauling and disposal regulations. In addition to the requirements of the "Contract Clauses," safety requirements shall conform to ANSI A10.6.

### 1.7.1 NOTIFICATIONS

Furnish timely notification of demolition projects to Federal, State, regional, and local authorities in accordance with 40 CFR 61-SUBPART M. Notify the City of Fitchburg Department of Health and the Engineer in writing 10 working days prior to the commencement of work in accordance with 40 CFR 61-SUBPART M.

Complete and submit Notification of Demolition and Renovation forms to Federal and State authorities and Engineer, postmarked or delivered at least ten working days prior to commencement of work, in accordance with 40 CFR 61-SUBPART M.

Notify affected utility companies before starting work and comply with their requirements. Notify Dig Safe by telephone. Please be advised that notification to other utility companies may be required if they are not a subscriber to Dig Safe.

## 1.8 CLEARING AND GRUBBING

### 1.8.1 DESCRIPTION OF WORK

- A. The scope of work under this Section includes the furnishing of all labor, materials, equipment and appurtenances; and performing all operations required for clearing and grubbing the site. Work will include, but not be limited to:
1. Stripping of existing surficial vegetation and organic soils.
  2. Removal of all surficial vegetation including trees, brush, dead wood, and other surficial vegetation.
  3. Removal of roots and stumps to a minimum depth of 24 inches below the ground surface or diameters of less than 3 inches, whichever comes first.
  4. Removal of existing structures, concrete and asphalt.
- B. Provide adequate pumping and drainage to keep all excavations and work sufficiently dry from groundwater and/or surface runoff so as not to adversely affect construction product nor cause excessive disturbance of underlying ground. Water shall be disposed in such a manner as will not cause injury to public health, or damage to public or private property, existing work or work in progress. The Contractor shall comply with all applicable environmental protection and/or sediment/erosion/dust control regulations.
- C. The Contractor shall take all necessary measures to minimize dust from rising and blowing across the site. The Contractor shall control all dust created by construction operations and movement of construction vehicles, both on site and on paved ways.

1.82 QUALITY ASSURANCE

- A. Codes and Standards: Comply with all rules, regulations, laws and ordinances of the Commonwealth of Massachusetts, the City of Fitchburg, and of all other governing authorities having jurisdiction.
- B. Neither the presence of the Engineer nor any observations and testing performed by him shall excuse the Contractor from defects discovered in his work.

1.83 JOB CONDITIONS

A. Site Information

- 1. Information in the Specifications relating to subsurface conditions, existing utilities and structures is from existing available documents. Such information is furnished only for the information and convenience of the Subcontractor and the accuracy and completeness of this information is not guaranteed. It is expressly understood that the Engineer will not be responsible for interpretations or conclusions drawn there from by the Contractor.
- 2. Specifications under which the work is to be performed are believed to be correct, but the Contractor shall have examined them for himself during the bidding period, as no additional compensation will be made for errors and inaccuracies that may be found therein. By submitting a bid, the Contractor affirms that has carefully examined the Site, all available information pertinent thereto, and all conditions affecting work under this Section.

B. Protection of Persons and Property

- 1. The work shall be executed in such a manner as to prevent any damage to adjacent property and any other property and existing improvements.
- 2. In the case of any damage or injury caused in the performance of work, the Subcontractor shall, at his own expense, make good such damage or injury to the satisfaction of, and without cost to the Owner.
- 3. Barricade any open excavations occurring as part of this work and post with warning lights. Operate warning lights during hours from dusk to dawn each day and otherwise as required.

C. Sanitary Facility

- 1. Contractor shall provide a portable chemical toilet service adequate for the number of workers anticipated. Facilities shall be maintained weekly.

1.9 DUST AND DEBRIS CONTROL

Prevent the spread of dust and debris to the surrounding areas and avoid the creation of a nuisance or hazard in the surrounding areas. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution. Clean up dust and debris in the work area daily. Sweep pavements as often as necessary to control the spread of debris.

- a. Control the potential emissions of odorous materials to minimize odors during the transport of material between areas on the Site and off site.

- b. Dust control procedures shall be performed to meet all applicable federal, state and local requirements.

## 1.10 PROTECTION

### 1.10.1 TRAFFIC CONTROL SIGNS

Where pedestrian and driver safety is endangered in the area of removal work, use traffic barricades with flashing lights. Notify the Engineer prior to beginning such work.

### 1.10.2 SECURITY FENCING

The Contractor shall utilize temporary fence located around the perimeter of the Site for the duration of the work. Padlocks shall be furnished for each gate and shall be weather resistant commercial grade and include six keys each. Each key shall be capable of opening all padlocks. Or provide temporary chain link fencing. All excavation shall be covered at the end of each day.

## 1.11 BURNING

Burning will not be permitted. Hot work is allowed by permit only obtained from local fire officials. Contractor is required to obtain all permits for hot work and to be in conformance with the permit at all times. Engineer is to receive copies of all hot work permits two days prior to conducting any hot work on site.

## 1.12 REQUIRED DATA

Demolition plan shall include procedures for careful removal and disposition of materials specified to be salvaged, coordination with other work in progress, a disconnection schedule of utility services, a detailed description of methods and equipment to be used for each operation and of the sequence of operations. Include description of dust control procedures to be used during the demolition, handling and transport phases of the work. Include statements affirming Include description of sedimentation and erosion control measures to be used to protect adjacent properties and roadways from erosion and/or siltation damage during this work. No work will be allowed to commence until all required sedimentation and erosion control measures are installed to the satisfaction of the Site Engineer. Construction of erosion control measures along the perimeter of the work areas shall be completed to the satisfaction of the Site Engineer prior to commencement of the Work. Temporary erosion control measures shall be continually maintained and updated/replaced throughout the course of site construction activities. Staked hay bails and silt fence should be in place around the perimeter of the site and around each catch basin and sewer manhole structure.

## 2.0 PRODUCTS

### 2.1 MATERIALS

- a. All materials required for demolition shall conform to the standards and requirements of local codes, municipalities, regulatory agencies, utility companies and other agencies having jurisdiction over the work to be performed and shall be acceptable to the Engineer.

## 3.0 EXECUTION

### 3.1 DEMOLITION

#### 3.1.1 DEMOLITION

- a. Cease operations and notify Engineer immediately if adjacent structures appear to be endangered. Do not resume operations until corrective measures have been taken.
- b. Demolished material shall be managed per the requirements of paragraph 3.3 of this section.
- c. Remove and promptly manage contaminated or dangerous materials encountered. Contractor is responsible for complying with all disposal facility requirements, including, but not limited to, sampling and analysis of waste streams to characterize as hazardous or non-hazardous, and transportation and disposal.
- d. Do not burn or bury materials on site.
- e. Keep work sprinkled with water to minimize dust generation. Provide hoses and water main or hydrant connections for this purpose. Contractor to obtain hydrant permits and pay any fees associated with the use of all hydrants. The contractor may use onsite water, as long as it is not used in a wasteful manner.
- f. Backfill areas excavated, and holes caused as a result of demolition to a field density of 92 percent (92%) with clean off-site borrow that meets State Highway Specification for gradation.
- g. Rough grade and compact areas affected by demolition to maintain site grades and contours.
- h. Remove demolished materials to temporary stockpile areas as work progresses. Leave Site in clean condition.
- i. The use of explosives will not be allowed for the Site.

#### 3.1.2 UTILITIES AND RELATED EQUIPMENT

Remove existing utilities and terminate in a manner conforming to the recognized code covering the specific utility and approved by the Engineer. Remove meters and related equipment and deliver to the location required by the issuing agency. If utility lines are encountered that are not shown on drawings, contact the Engineer for further instructions. Notify all corporations, companies, individuals or local authorities owning, or having jurisdiction over, utilities running to, through, or across areas disturbed by demolition operations. Have all utility services disconnected and capped at service mains within public right-of way in accordance with requirements governing the utility involved.

- a. The Contractor shall protect water lines, electric lines, telephone lines, roadways, sidewalks, fencing, railroad tracks, and other features to remain in place unless stated or shown to be removed.
- b. The Contractor shall protect all off-site trees, structures, utilities, and other features, and shall not trespass beyond the Contractor's work area shown.
- c. Upon completion of the work, the Contractor shall remove protective materials, enclosures, and temporary utilities and facilities that were installed in order to maintain services.
- d. Inside the limits of the Site, all existing structures, utilities, and appurtenances of any kind shall be completely removed.

Traffic details, road closing permits, sidewalk permits and associated labor and equipment required for the work described above shall be included by the Contractor.

### 3.1.4 DEMOLITION MATERIAL MANAGEMENT

- a. Demolition materials such as wood, metal, coated brick and concrete, dismantled equipment and other miscellaneous materials shall be disposed of off site.

### 3.2 FILLING VOIDS

Completely fill below grade areas, holes, open basements, and other hazardous openings and voids resulting from the demolition or removal of structures (manholes, catch basins, pipes, utilities, etc.) using approved select fill. Ensure that areas to be filled are free of standing water, frost, frozen, or unsuitable material, trash, and debris prior to fill placement. Place fill materials in horizontal layers not exceeding 12" in loose depth and compact each layer to a minimum field density of 92 percent (92%).

### 3.3 DISPOSITION OF MATERIAL

#### 3.3.1 TITLE TO MATERIALS

Except where specified in other sections, all materials and equipment removed, and not reused, shall become the property of the Contractor and shall be removed from Owner's property. Title to materials resulting from demolition, and materials and equipment to be removed, is vested in the Contractor upon approval by the Engineer of the Contractor's demolition and removal procedures, and authorization by the Engineer to begin demolition. The Engineer will not be responsible for the condition or loss of, or damage to, such property after contract award.

#### 3.3.2 SALVAGED MATERIALS AND EQUIPMENT

Remove all materials and equipment that are located on the Site and within the Site buildings.

#### 3.3.3 DISPOSAL OF OZONE DEPLETING SUBSTANCE (ODS)

Prevent discharge of Class I and Class II ODS to the atmosphere. Place recovered ODS in cylinders meeting ARI Guideline K suitable for the type ODS (filled to no more than 80 percent capacity) and provide appropriate labeling. Recovered ODS shall be removed from the Site and disposed of in accordance with 40 CFR 82.

### 3.3.3.1 Special Instructions

Each container shall have in it no more than one type of ODS. A warning/hazardous label shall be applied to the containers in accordance with Department of Transportation regulations. All cylinders including but not limited to fire extinguishers, spheres, or canisters containing an ODS shall have a tag with the following information:

- a. Activity name and unit identification code
- b. Activity point of contact and phone number
- c. Type of ODS and pounds of ODS contained
- d. Date of shipment

### 3.3.3.2 Fire Suppression Containers

Fire suppression system cylinders and canisters with electrical charges or initiators shall be deactivated prior to shipment. Also, safety caps shall be used to cover exposed actuation mechanisms and discharge ports on these special cylinders.

### 3.3.4 TRANSPORTATION GUIDANCE

Shipment of all ODS containers shall be in accordance with 49 CFR 173.301.

## 3.4 CLEANUP

### 3.4.1 DEBRIS AND RUBBISH

Remove and transport debris and rubbish in a manner that will prevent spillage on pavements, streets or adjacent areas. Clean up spillage from pavements, streets and adjacent areas. Conform to other federal, state and local applicable requirements. Provide means of removing mud from vehicle wheels before entering public thoroughfares. Where mud is tracked onto existing roadways by the Contractor, provide equipment and labor necessary to clean roadways.

- a. Maintain areas free of waste materials, debris and rubbish. Maintain Site in a clean and orderly condition.
- b. Provide adequate temporary trash storage facilities. Remove trash from Site periodically and dispose of at an approved facility.
- c. Maintain neat and orderly work zones. Store equipment and cover materials at the end of each workday.

**END OF SECTION**

SECTION 03 30 53

MISCELLANEOUS CAST-IN-PLACE CONCRETE

**1.0 GENERAL**

1.1 Description of Work

- A. The work of this Section specifies all cast-in-place concrete required for the project including, but not limited to: concrete walks and curb backing.
- B. The intent of the work of this Section is to provide structurally-sound cast-in-place concrete required for the project. When exposed to view in the finished work, concrete shall have smooth, flat, uniform surface texture and appearance.
- C. Remove and replace work in sufficiently large sections as directed by the Engineer.

1.2 Related Sections and Documents

- A. Construction Drawings.
- B. Section 31 00 00 – Earthwork.
- C. Section 32 16 00 – Curbs, Sidewalks, Islands, and Ramps.

1.3 Submittals / Project Record Documents

- A. Product Data. Submit manufacturer's product data, installation instructions, use limitations, and recommendations for each proprietary material used and for all other materials as requested by the Engineer. Provide certifications stating that materials comply with requirements.
- B. Shop Drawings. Provide sufficient information and detail so that reinforcing can be placed without the use of the Construction Drawings. Provide information on the number of pieces, sizes, grade of steel, accessories, and all other information needed for fabrication and placement. Show coordination of reinforcing with all items that are to be embedded into concrete construction.
- C. Mix Designs. Submit written reports for each proposed mix design at least 15 working days in advance of start of the work. Include specific information on quantities of admixtures and water used. Reports shall include at least ten 7-day and ten 28-day compressive strength test results of exact mix with same products and same source of materials.
- D. Test Reports. Submit certified reports for tests required within 48 hours after tests are made. Provide three copies each to the Engineer and the Owner.
- E. Delivery Slips. Provide concrete delivery slips showing job name and location, date and time of delivery, quantity of concrete, quality and type of concrete, admixtures, and all other relevant information. Submit at the end of each week.
- F. As so required in the Construction Specifications by the Engineer for the building and related work, submit all applicable documents and records verifying conformance with the Specifications.

- G. Certificates. Certificates signed by concrete producer shall be submitted.
- H. The Contractor shall submit proposed methods for curing of concrete to the Engineer for approval not less than 10 days prior to placement of any concrete.

#### 1.4 Regulatory Requirements

- A. Contractor shall maintain access for vehicular and pedestrian traffic as required for other site operations and construction activities. Utilize temporary striping, flagmen, barricades, warning signs, and warning lights as required and any other applicable work as required by the Massachusetts Highway Department and/or local agencies. Do not close or obstruct roadways, sidewalks, entrances/exits, hydrants, or any utilities without permits.
- B. Follow the applicable safety standards and guidelines as established by OSHA and other applicable local, State, and Federal governing agencies.
- C. Contact DigSafe (888-344-7233) 72 hours prior to commencing any excavation.

#### 1.5 References / Standards

- A. Follow the applicable safety standards and guidelines as established by OSHA and other applicable local, State, and Federal governing agencies.
- B. Follow the applicable ASTM standards, including but not limited to:
  - 1. ASTM A82 Steel Wire, Plain, for Concrete Reinforcement.
  - 2. ASTM A185 Steel Welded Wire Fabric, Plain, for Concrete.
  - 3. ASTM A615 Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
  - 4. ASTM C33 Concrete Aggregates.
  - 5. ASTM C39 Comprehensive Strength of Cylindrical Concrete Specimens.
  - 6. ASTM C94 Ready-Mixed Concrete.
  - 7. ASTM C143 Slump of Hydraulic Cement Concrete.
  - 8. ASTM C150 Portland Cement.
  - 9. ASTM C172 Sampling for Freshly Mixed Concrete.
  - 10. ASTM C173 Air Content of Freshly Mixed Concrete by the Volumetric Method.
  - 11. ASTM C260 Air-Entraining Admixtures for Concrete.
  - 12. ASTM C309 Liquid Membrane-Forming Compounds for Curing Concrete.
  - 13. ASTM C494 Chemical Admixtures for Concrete.



- C. Follow the other applicable references necessary to complete the work, including but not limited to:
1. ACI 318, Building Code Requirements for Reinforced Concrete.
  2. ACI 301, Specifications for Structural Concrete for Buildings.
  3. ACI 304, Recommended Practice for Measuring, Mixing, and Placing Concrete.
  4. ACI 305, Recommended Practice for Hot Weather Concreting.
  5. ACI 306, Recommended Practice for Cold Weather Concreting.
  6. ACI 347, Recommended Practice for Concrete Form Work.
  7. ACI 315, Recommended Practice for Detailing Reinforced Concrete Structures.
  8. CRSI, Reinforced Concrete – A Manual of Standard Practice.
  9. CRSI, Recommended Practice for Placing Reinforcing Bars.
  10. CRSI, Recommended Practice for Placing Bar Supports.

1.6 Job Conditions

- A. Acquire all necessary permits, licenses, and/or certificates as required by local, State, and/or Federal agencies prior to the start of the work and thereafter as appropriate.
- B. The Contractor shall remove and dispose all waste materials generated during this work. All waste products shall be disposed according to all applicable Federal, State, and local governing agencies.
- C. Any waste classified as a hazardous or toxic waste shall be disposed in the appropriate manner to a licensed hazardous waste disposal facility. Verification of proper disposal shall be submitted upon completion of the project.
- D. Weather. Protect concrete from damage and reduced-strength or performance due to weather extremes during mixing, placing, and curing.
- E. Cold Weather. Unless special precautions are taken to protect concrete, do not work when temperatures are below 40°F within 72 hours after placing concrete.
1. Comply with ACI 306 in cold weather.
  2. Maintain concrete temperature to at least 60°F. Reinforcement, forms, and ground in contact with concrete shall be free of frost.
  3. Keep concrete and formwork at least 50°F for at least 96 hours after placing concrete.
  4. The use of calcium chloride in any form is not permitted.

- F. Hot Weather. Concrete, when deposited, shall be less than 80°F. Cool the mix in a manner acceptable to the Engineer if the concrete temperature is higher. Comply with ACI 305 in hot weather.
- G. Provide temporary protection to ensure work is being conducted without damage or deterioration at time of final acceptance.

#### 1.7 Environmental Requirements

- A. Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.
- B. Comply with governing regulations pertaining to environmental protection.
- C. Any waste classified as a hazardous or toxic waste shall be disposed in the appropriate manner to a licensed hazardous waste disposal facility. Verification of proper disposal shall be submitted upon completion of the project.

#### 1.8 Delivery, Storage, and Handling

- A. Items of salvageable value to Contractor may be removed from the site. Storage or sale of removed items on the site will not be permitted and shall not interfere with any other work specified in the contract documents.
- B. Explosives shall not be brought to the site or used without written consent of authorities having jurisdiction. Such written consent will not relieve Contractor of total responsibility for injury to persons or for damage to property due to blasting operations. The performance of any required blasting shall comply with governing regulations.
- C. As specified herein, the Contractor shall manage, deliver, store, and handle all materials in accordance with manufacturer's requirements and applicable governing agencies.

#### 1.9 Quality Assurance / Quality Control

- A. Testing Agency. The Owner will provide the services of a testing agency to verify strength of materials delivered to the site.
- B. Provide temporary protection to ensure work being conducted without damage or deterioration at time of final acceptance.
- C. Quality Control. Perform testing and sampling for quality control during concrete work as follows:
  - 1. Sample concrete in compliance with ASTM C172.
  - 2. Make one slump test in compliance with ASTM C143 for each 30 cubic yards or portion thereof at discharge from truck and additional tests as deemed appropriate (i.e., at any change in concrete consistency).
  - 3. Make one air content test in compliance with ASTM C173 for each set of compressive strength specimens.
  - 4. Make one set of compressive strength tests in compliance with ASTM C39 for each 30 yards of concrete or fraction thereof. Test one

specimen at 7 days, one specimen at 28 days, and retain one specimen for future testing if needed.

## 2.0 PRODUCTS

### 2.1 Materials

- A. The Contractor shall provide all tools, materials, equipment, and supplies necessary to conduct the work fully to meet the requirements of this Section as detailed on the Construction Drawings.
- B. Concrete Materials. Comply with requirements of applicable Sections for concrete materials, admixtures, bonding materials, curing materials, and others as required.
- C. Portland Cement. ASTM C150, Type II of U.S. manufacture. Type III cement may also be used at Contractor's option. Only one brand of cement shall be used throughout the project. Limit temperature of cement to 140°F when delivered from batching plant.
- D. Aggregates. ASTM C33. Provide aggregates with long history of successful use in similar work and conditions. Grade fine aggregate from 1/4-inch to fines; grade coarse aggregate from 1/4-inch to size specified.
- E. Water. Clean, potable, and free from all impurities, which are detrimental to concrete.
- F. Air-Entraining Admixture. ASTM C260. Use only admixtures, which have been accepted in mix designs. Provide one of the following products, or approved equivalent.
  - 1. W.R. Grace, Darex AEA
  - 2. Master Builders, MBVAR
  - 3. Sika Chemical, SIKA AER
- G. Water-Reducing Admixture. ASTM C494. Use only admixtures that have been accepted in mix designs. Provide one of the following products, or approved equivalent.
  - 1. W.R. Grace, WRDA
  - 2. Master Builders, Pozzolith
  - 3. Sika Chemical, Plastocrete
- H. Reinforcing Bars. ASTM A615. Grade 60, new, deformed, unless indicated otherwise. Tag and identify reinforcing with waterproof marks for checking, sorting, and placing.
- I. Welded Wire Fabric. ASTM A185, new, rectangular. Tag and identify reinforcing with waterproof marks for checking, sorting, and placing.
- J. Form Work. Contractor's option, but shall be suitable to provide straight, flat, accurately-aligned surfaces within specified tolerances. Where exposed to view

in the finished work, form work shall be new and capable of providing exposed surface as specified.

- K. Ready-Mix Concrete. Comply with ASTM C94, except where more restrictive requirements are specified in this Section. Batch plant shall be certified in compliance with National Ready-Mixed Concrete Association standards.
- L. Curing Compound. Comply with ASTM C309, Type 1. Where direct glue-down finish materials are indicated to be installed over concrete, provide curing compounds that are certified by the corresponding manufacturer to not impair the bonding capability of normally-used construction adhesives.
- M. Sealer and Dust Proofer. Provide Sonneborne Kure-N-Seal or Engineer-approved equivalent.
- N. Tie Wire. 16-gauge minimum galvanized-steel wire complying with ASTM A82.
- O. Form Ties and Spreaders. Provide plastic cone type snap-off steel rod form ties which leave no metal within outer 1 inch of concrete and which leave the inner tie in the concrete when forms are removed. Provide ½-inch x 1 inch plastic cones for sinkages. Do not use wood spreaders or wire ties.
- P. Form Release Coatings. Provide commercial formulation non-grain raising and non-staining type form coating compounds that will not bond with, stain, nor adversely affect concrete surfaces, and will not impair subsequent treatments or bonding of concrete surfaces. Coating containing mineral oils or other non-drying ingredients will not be permitted.
- Q. Non-Slip Aggregate. Provide #12030 nonferrous metallic abrasive grit.
- R. Anchor Bolts. Provide minimum ½-inch diameter, hot-dip galvanized 18-inch long anchor bolts, hooked at ends.

## 2.2 Mix Design and Testing

- A. Mix Design. Proportion mixes shall be in compliance with ACI 301. Provide concrete of consistency that will work easily into corners and around reinforcement with the method of placement to be used and will not segregate or allow excess free water to collect on the surface. Provide concrete having the following characteristics:
  - 1. Compressive Strength. 4,500 PSI at 28 days.
  - 2. Slump. 3 inches to 4 inches.
  - 3. Entrained Air Content. 4% to 6% for concrete exposed to freezing and 2% to 4% for all other concrete.
  - 4. Maximum Aggregate Size. ¾ inches.
  - 5. Minimum Cement Content. 5.5 sacks of cement per cubic yard of concrete.
  - 6. Maximum Water/Cement Ratios. 0.50.

- B. Mix Design Revisions. When necessary because of job conditions, weather, test results, or other reasonable circumstances, mix designs may be adjusted if submitted to and approved by the Engineer in advance of use.

### 2.3 Configuration

Follow the details shown on the Construction Drawings, unless otherwise stated or shown.

## 3.0 EXECUTION

### 3.1 Examination

Contractor shall visit the site prior to submitting the bid for work specified herein and on the Construction Drawings and become familiar with existing site conditions. The Contractor shall evaluate the potential access difficulties and provide all necessary equipment and precautions to comply with the requirements of the Specification. Failure to fully investigate the site conditions shall not relieve the Contractor of the responsibility to adhere to the requirements of this Specification. The Engineer and Owner assume no responsibility for information or opinions concerning site conditions not specifically stated in writing. The site location and specific site features are shown on the Construction Drawings.

### 3.2 Preparation

- A. Installer shall examine substrates, supports, and conditions under which this work is to be performed and notify Contractor, in writing, of conditions detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected. Beginning work means Contractor accepts substrates and conditions.
- B. Surface Preparation. Remove loose material from compacted base material surface to produce a firm, smooth surface immediately before placing concrete.
- C. Cement Concrete Sidewalks, Islands, and Wheelchair Ramps. Prepare subgrade and construct in strict compliance with the requirements of the Specifications and the Construction Drawings, as modified by the applicable requirements of Section 31 00 00 of these Specifications, at a minimum.

### 3.3 Installation / Construction / Demolition

- A. Surfaces Concealed in the Finished Work. Provide as cast surfaces with at least minimum concrete coverage over reinforcing steel as specified in the Contract Drawings or as otherwise specified in ACI 318. Where concrete is indicated to be directly covered with a thin finish of paint, veneer plaster, or wall covering, provide surfaces as specified for "Surfaces Exposed in the Finished Work."
- B. Surfaces Exposed in the Finished Work. Provide smooth, uniform surfaces that appear monolithic. Remove fins and projections. Fill and patch voids with fine concrete grout. Rub entire surface with burlap bags and neat cement plaster or other acceptable technique to create a fine textured, uniform "plaster-like" surface.
- C. Non-Slip Aggregate Finish. Where indicated, provide abrasive, non-slip aggregate finish by troweling 1/4 pound per square foot of abrasive into surface.

- D. Sealing. Apply two coats of sealing/dust proofing compound to all concrete surfaces indicated to be left exposed in the finished work. Strictly comply with manufacturer's installation instructions and recommendations. Thoroughly clean and prepare concrete before sealing to remove all discoloration, dirt, and stains.
- E. Tolerances
  - 1. The following installed tolerances are allowable variations from locations and dimensions indicated on the Construction Drawings and shall not be added to allowable tolerances indicated for other work.
    - a. Allowable Variation from True Plumb:  $\pm 1/8$ -inch in 10.0 feet
    - b. Allowable Variation from True Level:  $\pm 1/8$ -inch in 10.0 feet
    - c. Allowable Variation from True Line:  $\pm 1/8$ -inch in 10.0 feet
    - d. Allowable Variation from True Wall Thickness:  $\pm 1/4$  inches
    - e. Allowable Variation from True Plane of Adjacent Surfaces:  $\pm 1/8$  inch before finishing; after finishing, joints shall be flush and invisible.
    - f. Provide ACI 301 Class A surface finish.

END OF SECTION

SECTION 31 00 00  
EARTHWORK

1.0 GENERAL

1.1 Work Included

A. Provide labor, materials and equipment necessary to complete the Work shown on the Drawings and as specified in this Section, which, without limiting the generality thereof, includes:

1. Clearing of trees and shrubs.
2. Stripping and stockpiling of topsoil and materials suitable for reuse.
3. Removal and disposal of existing pavement, curbs, and other materials to be disposed. Removal and disposal of demolition material from previously existing buildings at the site is addressed in specification Section 02 40 00.
4. Excavation, filling, grading, and compaction as indicated or required, including backfilling and compaction following demolition and removal curbing, concrete, and pavement.
5. Supplying of all fill materials including all handling, hauling, and placing of stockpiled materials for use in refilling, filling, backfilling, grading, and such other operations.
6. Excavation and legal off-site disposal of all unsuitable or excess materials.
7. Furnishing and installing base and subbase course materials under structures, pavements, including compaction.
8. Protection of existing buildings, pavements and utilities to remain.
9. Dewatering, as required, including all necessary control, management, and disposal of groundwater on a 24-hour basis during construction.
10. Protection of slopes surrounding the Work area from erosion and undermining.

1.2 Related Sections

- A. Section 02 40 00 - Demolition
- B. Section 31 01 10 - Site Preparation
- C. Section 31 25 00 - Slope Protection and Erosion Control

1.3 Applicable Standards

- A. Massachusetts State Building Code, 9<sup>th</sup> Edition.
- B. ASTM C136 - Method for sieve analysis of fine and coarse aggregates.
- C. ASTM D422 – Standard Test Method for Particle Size Analysis of Soils

- D. ASTM D1557 - Test methods for moisture-density relations of soils and soil aggregate mixtures using ten pound hammer (10 lb.) and eighteen-inch (18") drop.
- E. ASTM D2922 - Test methods for density of soil and soil-aggregate in place by nuclear methods (shallow depth).
- F. ASTM D3017 - Test methods for moisture content of soil and soil-aggregate in place by nuclear methods (shallow depth).
- G. ASTM D1556 - Test methods for density of soil and soil-aggregate in place by the sand cone method.
- H. OSHA Regulations, 29CFR Part 1926 – Excavations, current revisions.
- I. Comply with all rules, regulations, laws, permits and ordinances of all authorities having jurisdiction including, but not limited to the City of Fitchburg and Commonwealth of Massachusetts. All labor, materials, equipment and services necessary to make work comply with such requirements shall be provided without additional cost to the Owner.
- J. Massachusetts Highway Department Standard Specifications for Highways and Bridges

#### 1.4 Definitions

- A. The phrase "in-the-dry" used in this Section shall be defined as an excavation subgrade where the groundwater level has been lowered to at least 2 feet below the lowest level of the excavation, is stable with no ponded water, mud, or muck, is able to support construction equipment without rutting or disturbance and is suitable for the placement and compaction of fill material or concrete foundations.

#### 1.5 Quality Assurance

- A. The Contractor shall have at least five (5) years experience with similar work to that shown on the Drawings and specified herein.
- B. The Contractor's Engineer shall have at least (5) years experience with similar work to that shown on the Drawings and specified herein.

#### 1.6 Submittals

- A. Make submittals in accordance with other provisions of these Specifications.
- B. Submit the following information at the times indicated:
  - 1. A methods of construction submittal for various portions of the Work. Include a schedule and a detailed one-inch equals twenty feet (1"=20') scale plan and written description of proposed sequence of excavation (including installation of excavation support systems, where required), construction dewatering, and other related activities a minimum of two (2) weeks prior to start of excavation.
  - 2. Specifics of proposed compaction equipment, including description and specifications, a minimum of two (2) weeks prior to start of compaction work.
  - 3. For each type of material to be utilized as fill or backfill, the Contractor shall provide the Engineer at the Engineer's designated laboratory with one (1) fifty-pound (50 lb.) bag sample from each proposed source of material a minimum of two (2) weeks prior



to delivery to the site.

For off-site materials, submit the name of each material supplier with specific type and source of each material at least two (2) weeks prior to delivery to the site. Include the results of environmental testing specified herein. Any change in type or source of material during the work requires the written approval of the Engineer.

4. All off-site material brought to the site shall be free of contaminants. The Contractor shall identify the source of the material and be prepared to provide results of environmental testing performed on a representative sample of the material from each source. As a minimum, environmental testing shall include Total Petroleum Hydrocarbons (TPH) by ASTM D3328/EPA Method 8100, Polynuclear Aromatic Hydrocarbons (PAH) by EPA Method 8270, and metals (RCRA 8) by EPA Methods 6010/7471A.

Recycled Concrete Fill: Crushed or recycled concrete may *not* be used unless approved in writing by the Owner.

5. Submit representative samples of any geotextiles or other materials proposed for use, with manufacturer's specifications and product literature.
  6. Submit the name and address of the proposed landfill facility to be used for debris disposal for review at least two (2) weeks before commencing those activities. Submit copies of any permits required for disposal.
- C. The time period(s) specified for submittals are the minimum required to review, evaluate and respond to the Contractor. If, after review, resubmission is required for any reason, the specified time period(s) shall commence upon the date of receipt of the resubmittals. The Contractor is responsible for scheduling specified submittals and resubmittals so as to prevent delays in the work.
  - D. Coordinate earthwork, excavation support, and dewatering submittals. Do not proceed with any excavation until each of the specified submittals have been reviewed and accepted by the Engineer.
  - E. Despite review and comment by the Engineer, the Contractor shall remain solely responsible for the adequacy and safety of materials and methods used in construction.

#### 1.7 Project Conditions

- A. Visit the site to review all details of the work and working conditions and to verify dimensions in the field. Notify the Engineer in writing of any discrepancy before performing any work.
- B. Consult official records of existing utilities, both surface and subsurface, and their connection to be fully informed on all existing conditions and limitations as they apply to this work and its relation to other construction work.
- C. Protect existing utilities to remain within the work area in accordance with the requirements of authorities having jurisdiction over same.
- D. Notify the Engineer in writing if unexpected subsurface conditions are encountered.

## 1.8 Laws and Regulations

- A. All work shall be performed in accordance with the regulations of local, county, and state agencies and national or utility company standards as they apply.
- B. Obtain all required permits, licenses, and approvals of appropriate municipal and utility authorities prior to commencing the Work of this Section and pay all costs incurred therefrom.
- C. Follow the applicable safety standards and guidelines as established by OSHA and other local, state, and federal governing agencies.
- D. Conform to applicable regulatory procedures when discovering potentially hazardous, special or contaminated materials.
- E. Legally remove and dispose of all waste materials generated during the Work, including waste paints and other related compounds/chemicals. All waste products shall be disposed according to applicable federal, state, and local governing agencies.
- F. Any waste classified as a hazardous or toxic waste shall be disposed in the appropriate manner to a licensed hazardous waste disposal facility. Verification of proper disposal shall be submitted to the Owner upon completion of the project.
- G. Costs for disposal of contaminated materials encountered will be paid for on a time and materials basis as negotiated with the Owner.
- H. Maintain access for vehicular and pedestrian traffic as required for site operations and other construction activities. Utilize temporary striping, barricades, warning signs, and warning lights as required and any other applicable work as required by the Massachusetts Highway Department and/or other local agencies. Do not close or obstruct sidewalks, roadways, entrances/exits, hydrants, or any utilities without permits.

## 1.9 Coordination

- A. At least one day prior to the start of earthwork, Contractor shall arrange an on-site meeting with the Owner and Civil Engineer, for the purpose of establishing the Contractor's schedule of operations and scheduling inspection procedures and requirements.
- B. As construction proceeds, Contractor shall be responsible for notifying the Engineer prior to the start of earthwork operations requiring inspection and/or testing.

## 1.11 Survey

- A. General: The Contractor will be responsible for, and pay all costs incurred to provide all layout of the proposed work, control of the work through construction and a final survey immediately after completion of the work. The work shall be performed by a Registered Land Surveyor, or a Registered Civil Engineer, of the state where the project is located.
- B. Construction Layout: The Contractor shall utilize the lines and benchmarks established by the Surveyor to set up whatever specific detail controls are needed for establishing location, elevation lines and grades of all the work.

2.0 PRODUCTS

2.1 Fill Materials

- A. Ordinary Fill (Ordinary Borrow): Friable soil; free of rubbish, ice, snow, tree stumps, roots, and organic matter; no stone greater than two-third loose lift thickness. Material meeting Ordinary Fill specifications may be obtained from excavations provided that unacceptable material is culled (organics and clay are not acceptable).

Ordinary Fill shall be used in the following locations:

1. Outside building areas in unpaved areas up to ground surface elevation.
2. Under landscaped areas to twenty-four (24) inches below finish grade.
3. At locations shown on the Drawings.

- B. Granular Fill (Granular Subbase, Structural Fill): Inorganic soil free of clay, loam, ice and snow, roots, sod, rubbish, and other deleterious or organic material; graded within the following limits:

Sieve Size	Percent Finer by Weight
2/3 Loose Lift Thickness*	100
No. 10	30-95
No. 40	10-70
No. 200	0-15**

\*8-inch maximum

\*\*if placed during wet weather or within 3 feet of foundation and retaining walls, the percent finer by weight for the No. 200 sieve should be 0 to 8.

Granular Fill shall be used in the following locations:

1. Below base course of ground floor slab.
2. Where placed in the dry below foundations bearing on soil.
3. Below pavement/sidewalk subbase and base course.
4. Against foundation and retaining walls.
5. At locations shown on the Drawings.

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- C. Sand-Gravel (Sand & Gravel, Gravel Borrow, Gravel, Gravel Fill, Structural Fill): Hard, durable, natural soil; free of ice, snow, clay, shale, roots, sod, rubbish, and other deleterious or organic matter; graded within the following limits:

Sieve Size	Percent Finer by Weight
3 Inch*	100
1/2 Inch	50-85
No. 4	40-75
No. 50	8-28
No. 200	0-8

\* Two (2) inch maximum when used as pipe bedding material from six (6) inches below to six (6) inches above the pipe.

Sand-Gravel shall be used in the following locations:

- Where placed on saturated soil subgrade (use filter fabric between subgrade and Sand-Gravel).
- Building slab base course.
- Pavement/sidewalk subbase and base course.
- As pipe bedding for utilities other than water.
- Against foundation and retaining walls.
- At locations shown on the Drawings.

- D. Crushed Stone (1 1/4-inch, M2.01.3): Durable crushed rock or crushed gravel stone; free of ice, snow, sand, silt, clay, loam, shale, or other deleterious matter; graded within the following limits:

Sieve Size	Percent Finer by Weight
1 1/2 Inch	100
1 1/4 Inch	85-100
3/4 Inch	10-40
1/2 Inch	0-8

Crushed Stone (1 1/4-inch) shall be used at locations shown on the Drawings.

- E. Crushed Stone (3/4-inch, M2.01.4): Durable crushed rock or crushed gravel stone; free of ice, snow, sand, silt, clay, loam, shale, or other deleterious matter; graded within the following limits:

Sieve Size	Percent Finer by Weight
1 Inch	100
3/4 Inch	90-100
1/2 Inch	10-50
3/8 Inch	0-20
No. 4	0-5

Crushed Stone (3/4-inch) shall be used in the following locations:

- Surfacing material at Meadow Court adjacent to Community Building.
- Where placed on saturated soil subgrade (wrapped in filter fabric).
- As an alternate to Sand-Gravel for building slab base course.
- As an alternate to Sand-Gravel for pavement/sidewalk subbase and base course.
- At locations shown on the Drawings.

Last Modified: 02/06/2024 at 11:49PM EST

- F. Lean Concrete: Lean Concrete shall consist of a mixture of Portland cement and hard, durable mineral aggregate proportioned so that the concrete attains a minimum 28 day compressive strength of one-thousand (1,000) psi. Lean Concrete may be used as an alternative to Sand-Gravel and Crushed Stone to correct overexcavation.
- G. Sand: Free of silt, clay, loam, friable or soluble materials and organic materials. Gradations should conform to the limits indicated below or to the manufacturers recommendations if different from that indicated herein.

Sieve Size	Percent Finer by Weight
1/2 Inch	100
3/8 Inch	85-100
No. 4	60-100
No. 16	35-80
No. 50	10-55
No. 100	2-10

Sand shall be used as a blanket from the spring line to twelve (12) inches over the top of water lines.

- H. Fill in trenches shall meet the material specified above for appropriate locations.
- I. Fill material shall be obtained from on-site sources to the extent suitable material is available and off-site material to the extent suitable material is not available from on-site sources.
- J. All soil materials to be used as backfill will be evaluated based on site characterization data and/or, chemical test results submitted by the Contractor to the Engineer. Materials may be rejected for use based on the results of the evaluation. Off-site materials that are rejected for use shall be removed by the Contractor at his own expense if brought to the site.

2.2 Geotextile Fabric

- A. Non-Woven Geotextile Fabric: Mirafi 140N filter fabric or equivalent acceptable to the Engineer.

2.3 Reuse of Excavated Material

- A. Excavated materials without chemical contamination meeting the gradation limits for fill contained herein may be segregated and reused as accepted by the Engineer. It is not anticipated, however, that on-site materials will conform to the specified gradation requirements for Granular Fill, Sand-Gravel, or Crushed Stone. Due to their high silt content, the on-site soils may be easily disturbed during wet/freezing conditions when subject to heavy earthwork equipment. If weather conditions are favorable, the on-site fill, natural sands, and glacial till soils containing less than 30 percent fines (i.e. less than 30 percent finer than the No. 200 sieve by weight) may be reused as a substitute for Granular Fill provided that the moisture content can be controlled and the material can be compacted to the required density. However, the use of on-site soils should not be used as fill within 6 inches of the bottom of footings or within 6 inches of the bottom of building slab base course, nor should it be used above perimeter foundation drains or within 3 feet of foundation and retaining walls.

- B. To accomplish reuse and expedite backfilling and compaction time, it may be necessary to implement temporary soil stabilization and drying measures to make the on-site soils suitable for reuse as Granular fill. Such measures may include blending on-site soil with off-site gravel or using alternating layers of off-site Sand-Gravel fill and existing on-site soils. Contractor shall submit for review and approval by the Engineer proposed methods for maximizing reuse of existing on-site soils. The submittal shall include demonstrated experience on other projects having similar soil conditions.
- C. Reuse of the existing on-site Crushed Concrete fill and reclaimed asphalt shall be limited to paved areas. Crushed Concrete fill and reclaimed asphalt may be used up to within 14.5 inches of the bottom of pavement provided that the material can be compacted to the required density, there are no environmental contamination issues, and it is placed above the groundwater level.
- D. All suitable material, as determined by the Engineer, may be reused on the site, provided it meets the gradation requirements for the given materials as described in Article 2.1.

### 3.0 EXECUTION

#### 3.1 General Construction Requirements

- A. Prior to commencing excavation activity, identify required lines, levels, contours, and datum.
- B. Notify Engineer in writing of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.
- C. Identify and flag known utility locations.
- D. Maintain and protect existing buildings and utilities remaining which pass through work area. Provisions for protection of utilities shall be made in accordance with the requirements of authorities having jurisdiction over those utilities.
- E. Verify fill materials to be reused are acceptable to the Civil Engineer.
- F. Coordinate the sequence of excavation and earthwork activity with installation of lateral support systems, construction dewatering specified in Section 31 23 19, utility construction, and areas requiring preload/surcharging.
- G. Stability of excavations and job safety are the sole responsibility of the Contractor.
- H. Contractor shall design and implement construction measures to avoid disturbance to foundation subgrades and maintain stable slopes. Such measures could include placement of geotextile fabric and crushed stone working mat, lean concrete mud mats, or other appropriate subgrade and slope stabilization measures. Measures to create and maintain stable subgrades and slopes shall be considered part of this Work, and shall be provided at no additional cost to the Owner.
- I. Contractor shall employ construction methods and means that will keep flying dust to a minimum, and remove from all roadways dirt and other materials that have been spilled, washed, tracked, or otherwise deposited thereon by hauling and other operations.

#### 3.2 Protection of Adjacent Work

- A. Protect all adjacent structures which may be damaged by excavation work, including service utilities and pipe chases. All construction induced damage shall be repaired by the Contractor at no additional expense to the Owner.
- B. Protect plant life, lawns, and other features remaining as part of final landscaping.
- C. Grade excavation top perimeter to prevent surface water run-off into excavation or to adjacent areas.
- D. Furnish, install, monitor and maintain excavation support systems as specified in Article 3.9 of this Section.

### 3.3 Excavation

- A. Excavate all material of whatever nature encountered. Excavate in sequences and stages that will not subject permanent or temporary facilities or surfaces to unstable conditions. Excavation will not be permitted unless applicable earthwork, lateral earth support and dewatering submittals have been reviewed and accepted by the Engineer.
- B. Excavate to the lines, limits, and grades indicated. Correct unauthorized excavations at no additional cost to the Owner.
- C. Proceed with caution in the area of utility facilities. Expose them by hand or other excavation methods that will prevent damage. Excavation near electrical, gas, and water lines and near fiberoptic telecommunication lines shall be completely hand dug within three feet of the lines.
- D. Within proposed building areas excavate all unsuitable material to the greater of five feet (5') beyond building lines or within the area defined by planes sloping 1 horizontal to 1 vertical (1H:1V) downward and outward from outside edges of exterior footings down to the naturally deposited granular soils. Unsuitable material is pavement, concrete, topsoil, subsoil, existing foundations and slabs from previously existing structures, organic soil and existing fill.
- E. In pavement areas, remove topsoil, organics, tree stumps and other deleterious materials within 3 feet of finished grade. Remove other materials, including any walls, foundations, slabs, or other obstructions to at least 3 feet of finished grade. Existing pavement may remain in paved areas provided it is broken up or crushed.
- F. All excavations shall be performed in the "in the dry" and shall be accomplished by methods that preserve the undisturbed state of subgrade soils. The subgrade shall be dewatered to at least 2 feet below the bottom of the excavation prior to any structure excavation as specified in herein.
- G. Excavation and dewatering shall be accomplished by methods that preserve the undisturbed state of subgrade soils. Subgrade soils which become soft, loose, "quick", or otherwise unsatisfactory as a result of inadequate excavation, dewatering or other construction methods shall be removed and replaced as specified herein at no additional cost to the Owner.
- H. Use a construction procedure that permits visual identification of foundation subgrades. Do not excavate within a 2H:1V line extending downward and outward from the bottom of existing footings/foundation walls/slabs of adjacent buildings. Protect slopes adjacent and below existing footings from erosion and stormwater runoff.

- I. Carry out excavation in such a manner as to minimize movements of excavation support systems and prevent damage to adjacent buildings, structures, roadways, walkways and utilities. If wall movements become excessive or slopes become unstable, as determined by the Engineer, the Contractor shall immediately and temporarily cease all excavation activities and be prepared to implement measures to mitigate further movement. All delays, materials and equipment necessary to proceed as described will be at no additional cost to the Owner.
- J. Fill over excavated areas in accordance with specifications at Contractor's expense.
- K. Promptly notify the Owner and Engineer when any subsurface condition or facilities are encountered that interfere with construction, such as utility lines, boulders or chemical contamination.
- L. Stockpiling of Material: Establish material stockpiles on site only at locations that will not interfere with the progress of the Work. Off-site stockpiling and rehandling, if required, shall be the responsibility of the Contractor, at no additional expense to the Owner. Such off-site stockpiling shall require written permission from the Owner.

### 3.5 Subgrade Preparation

- A. Protect all subgrade soils. Perform excavation near subgrades using smooth-faced bucket or with hand tools. After final subgrade for building footings has been observed and accepted by the Engineer, Sand-Gravel, mud mat (lean concrete) or Crushed Stone wrapped in filter fabric may be required to stabilize footing subgrades. If required by the Engineer, stabilization materials shall be placed as soon as practical and at no additional cost to the Owner.
- B. Do not excavate to full depth when freezing temperatures may be expected unless subgrade is protected from freezing or footings or slabs can be placed immediately after excavation is completed and are protected from freezing.
- C. Proofrolling:

Pavement Areas: In both cut and fill areas, remove all pavement and existing soil to two (2) feet below existing grade. Prior to backfilling in paved areas, compact the surface with eight (8) passes of a vibratory drum roller weighing at least ten-thousand pounds (10,000 lbs) at the drum, capable of at least twenty-thousand pounds (20,000 lbs) of dynamic force. Requirements for preloading/surcharging of areas of pavement above organic soil/peat are addressed under a separate specification.

Confined Areas: Compact with a minimum of six (6) passes of a walk-behind vibratory drum roller or vibratory plate compactor acceptable to the Engineer.

Weakened or unstable areas that are observed during proofrolling shall be overexcavated and replaced with compacted Sand-Gravel or Lean Concrete as specified herein.

When near or below the water table, proofrolling should be at the discretion of the Engineer and should be performed using static (non-vibratory) equipment.

- C. All proofrolling of subgrades must be observed and accepted by the Engineer prior to placement of any backfill or foundation.
- D. No construction equipment other than that used for placement and compaction of fill shall be allowed on any final subgrade and previously placed fill unless authorized by the Engineer.



- E. Subgrade soils which become disturbed because of inappropriate operations on the part of the Contractor shall be recompacted or removed completely and replaced with Sand-Gravel or Lean Concrete. The necessity and extent of such removal shall be determined by the Engineer and shall be entirely at the Contractor's expense.
- F. To stabilize subgrades below the water table, a working mat of 3 inches of lean concrete or 6 inches of Crushed Stone wrapped in filter fabric may be required to stabilize the bottom of the excavation and provide a firm base for compaction of fill above it. If the Contractor will be pumping from these materials, they must be properly filtered to prevent migration of fines.

### 3.6 Backfilling

- A. After approval of subgrade by the Engineer, backfill areas to contours and elevations with specified materials.
- B. Backfill shall not contain frozen lumps nor be placed on frozen ground.
- C. Systematically backfill in layers and compact each layer according to Article 3.7. In confined areas place six (6) inch loose lifts and compact with at least four (4) passes of approved manually operated powered vibratory plate or drum compactor. Maintain fill materials with uniform moisture content, with no visible wet or dry streaking. The final filled soil mass shall be as uniform as practical in material characteristics, lift thickness, moisture content, and compactive effort required.
- D. Do not commence backfilling operations of utility trenches until all piping, etc., has been installed, inspected, and approved and the locations of all pipe and appurtenances have been recorded. Backfill carefully by hand around pipe using material specified herein and tamping firmly in layers, compacting by handrammers or mechanical tampers. When a manufacturer suggests backfill materials and methods other than those specified herein, such requirements shall govern, providing the finished work equals or exceeds the result obtained by the material and methods specified herein.
- E. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.
- F. Grade and compact fill surface to readily shed water. All fill is to be placed in-the-dry.
- G. Where horizontal layers meet a naturally rising slope, key layer into slope by benching into the slope.
- H. Employ placement method that does not disturb or damage foundations, utilities, underslab and perimeter drain systems, waterproofing, existing structures or utilities in trenches.
- I. Maintain range of optimum moisture content of backfill materials to attain required compaction density. If wet fill cannot be adequately compacted, remove and replace with drier fill.
- J. Do not backfill against foundation walls until the requirements for curing and waterproofing have been complied with. Backfill against supported foundation walls. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.
- K. Where backfill of buried walls is only on one side, only hand-operated rollers or plate compactors should be used within a lateral distance of 5 feet of the back of walls less than 15 feet high.

- L. Obtain the permission of the Engineer to proceed prior to backfilling any portion of the permanent structure.
- M. Crushed Stone placed below the water table shall be wrapped all-around in non-woven geotextile filter fabric.
- N. Slope away from building a minimum of two inches (2") in ten feet (10'), unless otherwise noted.
- O. Make grade changes gradual. Blend slope into level areas.
- P. All excavated soil materials are to remain on-site unless approved by the Owner. Remove surplus imported fill from site at no cost to the Owner.
- Q. At completion of Work, leave fill material stockpile areas completely free of excess fill materials.

3.7 Compaction

- A. In-place compaction testing will be performed in accordance with ASTM D1556 or ASTM D2922. Allow the Engineer sufficient time to make necessary observations and tests.
- B. All percent compactions are referenced to the maximum dry density of the soil as determined in accordance with ASTM D1557.
- C. The degree of compaction for fill placed in various areas shall be as follows:

<u>Area</u>	<u>Minimum Degree of Compaction</u>
Below building and retaining wall foundations and building slab-on-grade	95%
Pavement/sidewalk subbase and base course	95%
Below pavement/sidewalk subbase and base course	95%
Trench backfill	95%
Behind retaining walls	92%
Ordinary fill within the top three feet of grade in landscaped areas	90%
Landscaped areas below three feet from final grade	85%

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- D. The compaction alternatives given below are stated to provide minimum compaction standards only and in no way relieve the Contractor of his obligation to achieve the above-specified degree of compaction by whatever additional effort is necessary:

Compaction Method	Maximum Stone Size*	Maximum Loose Lift Thickness		Minimum Number of Passes	
		Below Structures and Pavement	Less Critical Area	Below Structures and Pavement	Less Critical Area
<b>GRANULAR FILL, SAND-GRAVEL</b>					
Hand-operated vibratory plate or light roller in confined areas	4"	6"	8"	4	4
Hand-operated vibratory drum rollers weighing at least 1,000# in confined areas	6"	10"	12"	4	4
Light vibratory drum roller Minimum weight at drum 3,000 # Minimum dynamic force 10,000#	8"	12"	18"	4	4
Medium vibratory drum roller Minimum weight at drum 10,000 # Minimum dynamic force 20,000#	8"	18"	24"	6	6

\* And no more than two-thirds (2/3) loose lift thickness.

- E. If field density testing indicates Work does not meet specified requirements, remove Work (or recompact where appropriate), replace and retest at the expense of the Contractor.
- F. Placement and compaction of all fill within building limits and beneath paved areas will be observed and tested by the Engineer.
- G. Where utility facilities are supported in place, use equipment and techniques as required to achieve the specified compaction under and around them. When a pipe manufacturer suggests backfill materials and methods other than those specified herein, such requirements shall govern, provided that the Engineer agrees that the finished work equals or exceeds the result obtained using the material and methods specified herein. Uniformly compact into confined areas. Use flowable fill where specified or directed.
- H. Protect fill by grading to drain and providing a smooth surface that will readily shed water. Grade the surface of the areas in such a manner as to prevent ponding of surface runoff water in areas to receive compacted fill. All fill is to be placed "in-the-dry".
- I. To the extent practicable, each layer of fill shall be compacted to the specified density the same day it is placed.
- J. Fill that is too wet for proper compaction shall be disced, harrowed, mixed with drier material or otherwise dried to a proper moisture content for compaction to the required density. If the fill material cannot be dried within 48 hours of placement, it shall be removed and replaced with drier fill at the Contractor's expense.

Last Modified: 02/06/2024 at 11:49PM EST

- K. Fill that is too dry for proper compaction shall receive water uniformly applied over the surface of the loose layer. Sufficient water shall be added to allow compaction to the required density.
- L. Fill that becomes disturbed after compaction as a result of the Contractor's operations shall be removed and replaced or recompacted to the specified degree of compaction at the Contractor's expense.
- M. Crushed stone shall be compacted with four (4) passes of approved compaction equipment.

### 3.9 Excavation Support Systems

- A. Provide shoring, sheeting, and/or bracing of excavations in accordance with approved submittals as required to assure complete safety against collapse of excavations. Protect excavations to prevent cave-in or loose soil from falling into excavation. Where possible, Contractor may elect to open-cut certain areas of the required excavation. The Contractor shall be totally responsible for the design of temporary shoring and side slopes.
- B. Comply with local safety regulations and/or, in the absence thereof, with the provisions of the Occupational Safety and Health Act (OSHA) for trenching and excavation. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state and federal safety regulations. Specifically, the current OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926 should be followed. It is our understanding that these regulations are strictly enforced by OSHA.

The Contractor's "responsible person", as defined in 29 CFR Part 1926, will evaluate the soil exposed in the excavations as part of the Contractor's safety procedures. If an excavation, including a trench, is extended to a depth of more than twenty feet (20'), the Contractor will engage a Professional Engineer registered in the state of Massachusetts to design the slopes and/or shoring required for the excavation.

The Contractor's "responsible person" will establish a minimum lateral distance from the crest of the slope for all vehicles and spoil piles. Likewise, the Contractor's "responsible person" will establish protective measures for exposed slope faces.

- C. Except as shown on the Drawings or as directed by the Engineer, remove lateral earth support system components as backfilling operations progress, taking all necessary precautions to prevent collapse of excavation sides.
- D. The Contractor shall be fully responsible for furnishing, installing, maintaining, reinforcing, removal and non-removal of all lateral earth support system components and shall be fully responsible for all damages, losses and claims involving the use or non-use of excavation support systems despite any orders given or any orders failed to be given by the Engineer. The Contractor shall hold harmless the Engineer and Owner from all damages, losses and claims involving the use or non-use of excavation support systems.
- E. The Contractor shall furnish, put in place, and maintain excavation support systems to support the vertical sides of excavations, to minimize any movement which could in any way diminish the width of the excavation below that necessary for proper construction, and to protect adjacent roadways, walkways, utilities and structures from disturbance, undermining or other damage.

- F. If the Engineer is of the opinion that at any points sufficient or proper supports have not been provided, he may order additional supports put in at the expense of the Contractor, and compliance with such order shall not relieve or release the Contractor from his responsibility for the sufficiency of such supports. Care shall be taken to prevent voids outside of the excavation support system, but if voids are formed, they shall be immediately filled and rammed.
- G. Removal and Non-Removal of Excavation Support System
  - 1. The Contractor shall leave in place to be embedded in the backfill all excavation support system components which the Engineer may direct him in writing to leave in place at any time during the progress of the work for the purpose of preventing injury to structures, utilities or property, whether public or private. The Engineer may direct that components used for excavation support be cut off at specified elevations. No payment will be made by the Owner for such sheeting and shoring and bracing left in place.
  - 2. All components of the excavation support system not left in place shall be carefully removed in such a manner as not to endanger the construction or other structures, utilities, or property. All voids left or caused by withdrawal of excavation support system components shall be immediately refilled with sand by ramming with tools especially adapted to that purpose, or otherwise as may be directed.

### 3.10 Tolerances

- A. Top Surface of Exposed Subgrade: Plus or minus one inch (1").
- B. Top of Topsoil: Plus or minus one-half inch (1/2").

### 3.11 Field Quality Control

- A. The Owner will retain a Engineer to perform on-site observations and testing during the following phases of the construction operations.
  - 1. Observation during excavation of construction areas, building subgrade areas, roadway areas, and other controlled fill areas.
  - 2. Observation of all subgrades below unsuitable soils and foundation subgrades prior to placement of compacted backfill or foundations.
  - 3. Observation during placement and compaction of backfill within building subgrade areas, roadway areas and other controlled fill areas as appropriate.
  - 4. Laboratory testing and analysis of fill and bedding materials specified, as requested.
  - 5. Performing water content, gradation and compaction tests at a frequency and at locations necessary to evaluate compliance with this Specification. The results of these tests will be submitted to the Contractor on a timely basis so that the Contractor can remedy any deficiencies that may be discovered.
- B. Placement and compaction of fill within building areas, retaining walls and beneath paved areas will be observed and tested by the Engineer. At least one (1) field density test will be performed for each five hundred (500) cubic yards of fill and for each lift of fill placed.
- C. Test and analysis of fill materials will be performed in accordance with ASTM D422 and ASTM D1557.
- D. In-place compaction testing will be performed in accordance with ASTM D2922.

- E. Provide the Engineer with free and safe access to Work at all times.
- F. The presence of the Engineer does not include supervision or direction of the actual Work by the Contractor. Neither the presence of the Engineer nor any observation and testing performed by the Engineer, nor any notice or failure to give notice, shall excuse the Contractor from defects in his Work.
- G. Any re-testing that must be performed due to non-compliance with this specification shall be at the expense of the Contractor and at no additional expense to the Owner.

#### 4.0 MEASUREMENT AND PAYMENT

- 4.1 Payment for the scope of work outlined herein, which includes providing all labor, materials and equipment to perform earthwork as specified herein and as shown on the Drawings shall be made on a lump sum basis as stipulated on the Proposal Form.

**END OF SECTION 31 00 00**

SECTION 31 01 10

SITE PREPARATION

**1.0 GENERAL**

1.1 Description of Work

- A. Protection of existing structures, landscaping, vegetation, light poles, and any existing on-site materials/features indicated on the Contract documents and Construction Drawings to remain.
- B. Stripping topsoil from areas that are to be incorporated into the limits of the project and where so indicated on the Construction Drawings.

1.2 Related Sections and Documents

- A. Section 02 40 00 – Demolition
- B. Section 31 00 00 – Earthwork
- C. Section 31 25 00 – Slope Protection and Erosion Control
- D. Section 32 22 26 – Asphalt Base Course
- E. Construction Drawings

1.3 Submittals / Project Record Documents

The Contractor shall submit any documents necessary to conform with the requirements of this Section.

1.4 Regulatory Requirements

- A. Contractor shall maintain access for vehicular and pedestrian traffic as required for other construction activities and site operations. Utilize temporary striping, flagmen, barricades, warning signs, and warning lights as required and any other applicable work as required by the Massachusetts Highway Department and/or local agencies. Do not close or obstruct roadways, sidewalks, entrances/exits, hydrants, or any utilities without permits.
- B. Follow the applicable safety standards and guidelines as established by OSHA and other applicable local, State, and Federal governing agencies.
- C. Contact DigSafe (888-344-7233) 72 hours prior to commencing any excavation.

1.5 References / Standards

- A. Follow the applicable safety standards and guidelines as established by OSHA and other applicable local, State, and Federal governing agencies.
- B. Follow the requirements outlined in project specific permits and requirements.

1.6 Job Conditions

- A. Conditions existing at time of inspection for bidding purposes will be maintained by Owner in so far as practical.
- B. Variations to conditions or discrepancy in actual conditions as they apply to site preparation operations are to be brought to the attention of the Owner prior to the commencement of any site work.
- C. Owner assumes no responsibility for the condition of structures to be demolished.

1.7 Environmental Requirements

- A. Construct temporary erosion control system as defined in the Construction Drawings and Specifications or as directed by the Engineer to protect adjacent properties and water resources from erosion and sedimentation.
- B. Conform to any requirements specified in Section 31 00 00 – Earthwork.
- C. Conform to applicable regulatory procedures when discovering hazardous, special, or contaminated materials.
- D. Comply with governing regulations pertaining to environmental protection.

1.8 Delivery, Storage, and Handling

As specified herein, the Contractor shall manage, deliver, store, and handle all materials in accordance with manufacturer's requirements and applicable governing agencies.

1.9 Quality Assurance / Quality Control

The appropriate QA/QC measures shall apply throughout the entire work of this project.

**2.0 PRODUCTS**

2.1 Materials

The Contractor shall provide all tools, materials, equipment, and supplies necessary to conduct the work fully to meet the requirements of this Section as detailed on the Construction Drawings.

2.2 Mix Design and Testing

Not applicable to this Section.

2.3 Configuration

The Contractor shall perform the work in accordance with the details shown on the Construction Drawings, or as specified herein.



### 3.0 EXECUTION

#### 3.1 Examination

The Contractor shall visit the site prior to submitting the bid for work specified herein and on the Construction Drawings and become familiar with existing site conditions. The Contractor shall evaluate the potential access difficulties and provide all necessary equipment and precautions to comply with the requirements of the Specification. Failure to fully investigate the site conditions shall not relieve the Contractor of the responsibility to adhere to the requirements of this Specification. The Engineer and Owner assume no responsibility for information or opinions concerning site conditions not specifically stated in writing. The site location and specific site features are shown on the Construction Drawings.

#### 3.2 Preparation

- A. Verify that existing plant life and clearing limits are clearly tagged, identified, and marked in such a manner as to ensure their safety throughout construction operations.
- B. Locate and identify existing utilities that are to remain and protect them from damage.
- C. Protect trees, plant growth, and features designated to remain as final landscape.
- D. Conduct operations with minimum interference to public or private accesses and facilities. Maintain access and egress at all times and clean or sweep any roadways daily or as required by the governing authority. At such times as deemed necessary by the Owner, dust control shall be provided with sprinkling systems or equipment provided by the Contractor.
- E. Protect benchmarks, property corners, and all other survey monuments from damage or displacement. If a marker needs to be removed it shall be referenced by a licensed land surveyor and replaced, as necessary, by the same at the Contractor's expense and without additional compensation.
- F. Provide traffic control as required, in accordance with the U.S. Department of Transportation "Manual of Uniform Traffic Control Devices" and the Massachusetts Highway Department requirements.

#### 3.3 Installation / Construction / Demolition

##### A. Clearing

1. Clear areas required for access to the site and execution of work.
2. Unless otherwise indicated on the Construction Drawings, remove trees, shrubs, grass, other vegetation, improvements, or obstructions interfering with installation of new construction. Removal includes digging out stumps and roots. Depressions caused by clearing and grubbing operations shall be filled to subgrade elevation to avoid water ponding. Satisfactory fill material shall be placed in horizontal layers not exceeding 12-inch loose depths, and thoroughly compacted per fill requirements of this Section and Section 31 10 00.

3. Remove grass, trees, plant life, stumps, and all other construction debris from the site to an approved landfill that is suitable for handling such material according to applicable State and Federal laws and regulations.

B. Topsoil Excavation

1. Strip topsoil from areas that are to be filled, excavated, landscaped, or re-graded to such a depth that it prevents intermingling with underlying subsoil or questionable material.
2. Cut heavy growths of grass from areas before stripping and remove with the rest of the cleared vegetative material.
3. Topsoil shall consist of organic surficial soil found in depths of not more than 6 inches. Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones and other objects over two inches in diameter, weeds, roots, and other objectionable material.
4. Stockpile topsoil in areas shown or where directed and in a manner that will least interfere with current uses of the site. Construct storage piles to freely drain surface water and surround with hay bales to prevent sediment transport. Cover storage piles as required, to prevent windblown dust. Dispose unsuitable topsoil as specified for waste material, unless otherwise specified by Owner. Excess topsoil shall be removed from the site for proper disposal by the Contractor unless specifically noted otherwise on the Construction Drawings.

END OF SECTION

SECTION 31 10 00

SITE CLEARING

**1.0 GENERAL**

1.1 Section Includes

- A. Cleaning site of debris, grass, trees, and other plant life in preparation for site or building earthwork.
- B. Protection of existing structures, trees, or vegetation indicated on the Construction Drawings to remain.
- C. Stripping topsoil from areas that are to be incorporated into limits of project and storage of topsoil where so indicated on Construction Drawings.

1.2 Related Sections

- A. Section 02 40 00 - Demolition
- B. Section 31 00 00 - Earthwork
- C. Section 31 25 00 – Slope Protection and Erosion Control
- D. Construction Drawings

1.3 Environmental Requirements

- A. Construct temporary erosion control systems as shown on Construction Drawings to protect adjacent properties and water resources from erosion and sedimentation.

1.4 Project Conditions

- A. Existing Conditions at time of inspection for bidding purposes will be maintained by Owner in so far as practical.
- B. Variations to conditions or discrepancy in actual conditions as they apply to site preparation operations are to be brought to attention of Owner prior to commencement of site work.

**2.0 PRODUCTS**

1.1 Equipment

- . Off-site materials shall be transported to project using well-maintained and operating vehicles. Once on site, transporting vehicles shall stay on designated haul roads and shall at no time endanger improvements by rutting, overloading, or pumping.

### 3.0 EXECUTION

#### 3.1 Preparation

- A. Identify existing plant life that is to remain and verify clearing limits are clearly tagged, identified, and marked in such manner as to ensure their safety throughout construction operations.

#### 3.2 Protection

- A. Locate and identify existing utilities that are to remain and protect these from damage.
- B. Protect trees, plant growth, and features designated to remain as part of final landscaping.
- C. Conduct operations with minimum interference to public or private accesses and facilities. Maintain ingress and egress at all times and clean or sweep roadways daily as required by governing authority. Dust control shall be provided with sprinkling systems or equipment provided by Contractor.
- D. Protect benchmarks, property corners, and other survey monuments from damage or displacement. If marker needs to be removed it shall be referenced by a licensed land surveyor and replaced, as necessary, in kind.
- E. Provide traffic control as required, in accordance with the US Department of Transportation's "Manual on Uniform Traffic Control Devices" and applicable state highway department requirements.

#### 3.3 Clearing

- A. Clear areas required for access to site and execution of work.
- B. Unless otherwise indicated on Construction Drawings, remove trees, shrubs, grass, other vegetation, improvements, or obstructions interfering with installation of new construction. Removal includes digging out stumps and roots. Depressions caused by clearing and grubbing operations are to be filled to subgrade elevation to avoid ponding of water. Satisfactory fill material shall be placed in accordance with Section 31 00 00.
- C. Remove grass, trees, plant life, stumps, and other construction debris from site to dump site that is suitable for handling such material according to state laws and regulations.

#### 3.4 Topsoil Excavation

- A. Topsoil shall consist of organic surficial soil found in depth of not less than 6-inches. Satisfactory topsoil shall be reasonably free of subsoil, clay lumps, stones and other objects over 2-inches in diameter, weeds, roots, and other objectionable material.
- B. Cut heavy growths of grass from areas before stripping and remove cuttings with remainder of cleared vegetative material.

- C. Strip topsoil from areas that are to be filled, excavated, landscaped, or re-graded to such depth that it prevents intermingling with underlying subsoil or questionable material.
- D. Stockpile topsoil in storage piles in areas shown on Construction Drawings or where directed by Owner. Construct storage piles to freely drain surface water. Cover storage piles as required to prevent windblown dust. Dispose of unsuitable topsoil as specified for waste material, unless otherwise specified by Owner. Contractor shall remove excess topsoil from site unless specifically noted otherwise on Construction Drawings.

**END OF SECTION**

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SECTION 31 23 13

EXCAVATION, BACKFILL AND COMPACTION FOR PAVEMENT

**1.0 GENERAL**

1.1 Section Includes

- A. Excavate to line, slope and configuration as shown in the plans and specifications for proposed pavements.
- B. Fill to line, slope and configuration as shown in the plans and specifications for proposed pavements.
- C. Compacting fill materials in an acceptable manner as stated herein.

1.2 Related Sections

- A. Section 32 16 00 – Curbs, Sidewalks, Islands and Ramps.
- B. Construction Drawings.

1.3 Reference Standards

- A. American Society for Testing and Materials (ASTM) latest edition.
  - D 422 Method for Particle Size Analysis of Soils.
  - D 698 Test for Moisture-Density Relations of Soils Using 5.5 lb (2.5 kg) Rammer and 12 inch (304.8 mm) Drop (Standard proctor).
  - D 1556 Test for Density of Soil in Place by the Sand Cone Method.
  - D 1557 Test for Moisture-Density Relations of Soils using 10 lb (4.5 kg) Rammer and 18 inch (457 mm) Drop (Modified Proctor).
  - D 1559 Test method for Resistance to Plastic Flow of Bituminous Mixtures using Marshall Apparatus.
  - D 2167 Test for Density of Soil in Place by the Rubber Balloon Method.
  - D 2216 Laboratory Determination of Moisture Content of Soil.
  - D 2487 Classification of Soils for Engineering Purposes.
  - D 2922 Test for Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).
  - D 3017 Test for Moisture Content of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).
  - D 4318 Test for Plastic Limit, Liquid Limit, and Plasticity Index of Soils.

- C 25 Chemical Analyses of Limestone, Quicklime and Hydrated Lime.
- C 110 Physical Testing for Quicklime and Hydrated Lime, Wet Sieve Method.
- C 618 Specifications for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.
- C 977 Quicklime and Hydrated Lime for Soil Stabilization.
- B. American Association of State Highway and Transportation Officials (AASHTO) latest edition.
  - T 88 Mechanical Analyses of Soils.

#### 1.4 Quality Assurance

Independent testing laboratory selected and paid for by Contractor shall be retained to perform construction testing on filling operations and subgrade analysis as specified herein.

#### 1.5 Submittals

- A. Shop drawings or details pertaining to excavating and filling for pavement are not required unless otherwise shown on the drawings or specifications or if contrary procedures to the project documents are proposed.
- B. Submit a sample of each type of off-site fill material that is to be used in backfilling in an air-tight, 10 lb. container for the testing laboratory or submit a gradation and certification of the aggregate material that is to be used to the testing laboratory for review.
- C. Submit names, qualifications and resumes of independent testing laboratory and personnel. Laboratory personnel shall be licensed by the State of Massachusetts for those tasks, which they are to perform.

## 2.0 PRODUCTS

### 2.1 Materials

- A. Suitable Backfill Material: Shall meet the requirements of specification section 31 00 00.
- B. Gravel Subbase: Inert materials that are hard, durable stone and coarse sand, free from loam and clay, surface coatings and deleterious material, and complying with the gradation requirements of state specifications.



### 3.0 EXECUTION

#### 3.1 Preparation

- A. Identify all lines, elevations and slopes necessary to construct pavements, curbs and gutters, bases, walkways and roadways as shown in the plans and specifications.
- B. Carefully protect benchmarks, property corners, monuments or other reference points.
- C. Locate and identify all site utilities that have previously been installed and may be in danger of damage by grading operations.
- D. Locate and identify all existing utilities that are to remain and protect them from damage.
- E. Over excavate and properly prepare areas of subgrade that are not capable of supporting the proposed systems. These areas are to be stabilized by using acceptable backfill materials placed and compacted as specified, filter fabrics and/or aggregate material.

#### 3.2 Excavation

- A. Excavate roadway and pavement areas to line and grade as shown in the plans and specifications.
- B. Unsuitable excavated material is to be disposed of in a manner and location that is acceptable to the Owner and local governing agencies.
- C. Perform excavation using capable, well maintained equipment and methods acceptable to the Owner and the project document requirements.

#### 3.3 Filling

- A. Areas exposed by excavation or stripping and on which subgrade preparations are to be performed shall be scarified to minimum depth of 8" and compacted to minimum of 95% of optimum density, in accordance with ASTM D 698 (or 92% of optimum density, in accordance with ASTM D 1557), at a moisture content of no less than 1% below and no more than 3% above the optimum moisture content. These areas shall then be proof rolled to detect any areas of insufficient compaction. Proof roll the exposed natural ground, above the groundwater elevation, by making at least four (4) passes with a vibratory drum roller having a minimum drum weight of at least 8,000 pounds, under the supervision and direction of a Soil Engineer. Areas observed to be weak or unstable during proof rolling shall be excavated and replaced with compacted structural fill or sand and gravel. If the subgrade becomes saturated prior to proof rolling, it shall be allowed to dry before proof rolling begins. Alternatively, the saturated soils may be removed to firm dry natural ground prior to proof rolling.
- B. Fill materials used in preparation of subgrade shall be placed in lifts or layers not to exceed 6" loose measure and compacted to a minimum density of 95% of optimum density, in accordance with ASTM D 698, (or 92% of the optimum density, in accordance with ASTM D 1557) at a moisture content of no less than 1% below and no more than 3% above the optimum moisture content.

3.4 Compaction

- A. Maintain optimum moisture content of fill materials to attain required compaction density.
- B. An independent testing laboratory selected and paid by the Contractor, shall be retained to perform testing on-site.
- C. Compaction tests will be performed at a rate of 1 per lift per 200 lf of trench pavement.
- D. If compaction requirements are not complied with at any time during construction process, remove and recompact deficient areas until proper compaction is obtained at no additional expense to Owner.

3.5 Maintenance of Subgrades

- A. Finished subgrades shall be verified to ensure proper slope and conditions for construction above subgrade.
- B. Protect subgrade from excessive wheel loading during construction including concrete trucks and dump trucks.
- C. Remove areas of finished subgrade found to have insufficient compaction density to depth necessary and replace in a manner that will comply with compaction requirements by use of material equal to or better than best subgrade material on-site. Surface of subgrade after compaction shall be hard, uniform, smooth, stable, and true to grade and cross section.

**END OF SECTION**

SECTION 31 25 00

SLOPE PROTECTION AND EROSION CONTROL

**1.0 GENERAL**

1.1 Description of Work

- A. Temporary and permanent erosion control systems.
- B. Slope Protection Systems.

1.2 Related Sections

- A. Section 31 01 10 – Site Preparation
- B. Section 31 00 00 – Earthwork
- C. Construction Drawings

1.3 Submittals / Project Record Documents

- A. Accurately record actual locations of capped utilities and subsurface obstructions.
- B. Provide weight-slips, manifests, and any applicable documents to Owner and any third-party or government agency verifying proper off-site disposal.
- C. Provide all applicable documents and submittals as required to conform to this Specification and the Construction Drawings.

1.4 Regulatory Requirements

- A. Conform to applicable local, State, and Federal codes for demolition of structures, safety of adjacent structures, dust control, and runoff control. Obtain required permits and licenses from authorities. Pay associated fees including disposal charges at no additional cost to the Owner.
- B. Notify affected utility companies before starting work and comply with their requirements.
- C. Contractor shall maintain access for vehicular and pedestrian traffic as required for site operations and other construction activities. Utilize temporary striping, flagmen, barricades, warning signs, and warning lights as required and any other applicable work as required by the Massachusetts Department of Transportation and/or local agencies. Do not close or obstruct roadways, sidewalks, entrances/exits, hydrants, or any utilities without permits.
- D. Contact DigSafe (888-344-7233) 72 hours prior to commencing any excavation.

1.5 References / Standards

- A. Follow the applicable safety standards and guidelines as established by OSHA and other local, State, and Federal governing agencies.
- B. Follow the requirements outlined project-specific permits.
- C. Follow the applicable ASTM and other related specifications and procedures in order to fully conduct and complete the work of this project.

1.6 Job Conditions

- A. Owner assumes no responsibility for condition of structures to be demolished. Conditions existing at time of inspection for bidding purposes will be maintained by Owner in so far as practicable. Variations within structures may occur by Owner's removal and salvage operations prior to the start of the demolition work.

1.7 Environmental Requirements

- A. The Contractor shall protect adjacent properties and water resources from erosion and sediment damage throughout the life of the Contract.
- B. Conform to applicable regulatory procedures when discovering hazardous, special, or contaminated materials.
- C. Comply with governing regulations pertaining to environmental protection.
- D. Acquire all necessary permits, licenses, and/or certificates as required by local, State, and/or Federal agencies prior to the start of the work and thereafter as appropriate.
- E. The Contractor shall remove and dispose all waste materials generated during this work, including waste paints and other related compounds/chemicals. All waste products shall be disposed according to all applicable Federal, State, and local governing agencies.
- F. Any waste classified as a hazardous or toxic waste shall be disposed in the appropriate manner to a licensed hazardous waste disposal facility. Verification of proper disposal shall be submitted upon completion of the project.

1.8 Delivery, Storage, and Handling

- A. Storage or sale of removed items on the site will not be permitted and shall not interfere with any other work specified in the contract documents.
- B. Explosives shall not be brought to the site or used without written consent of authorities having jurisdiction. Such written consent will not relieve Contractor of total responsibility for injury to persons or for damage to property due to blasting operations. The performance of any required blasting shall comply with governing regulations.

1.9 Quality Assurance / Quality Control

- A. The appropriate QA/QC measures will apply throughout the entire work of this project.

## 2.0 PRODUCTS

### 2.1 Materials

- A. Hay or straw bales.
- B. Fencing for siltation control as specified on the Construction Drawings.
- C. Curlex blankets by American Excelsior Company or approved equal.
- D. Bale stakes 4 feet in length and 1 inch x 1 inch in width.
- E. Temporary mulches such as loose hay, straw, netting, wood cellulose, or agricultural silage.
- F. Metal fence stakes, a minimum of 8 feet in length.

### 2.2 Mix Design and Testing

Any testing shall be conducted in accordance with the requirements of the Engineer and local, State, and Federal guidelines and standards.

### 2.3 Configuration

The work shall conform to the details shown on the Construction Drawings, this Specification, and project-specific permits and requirements, as specified by local, State, and Federal government agencies.

## 3.0 EXECUTION

### 3.1 Examination

The Contractor shall visit the site prior to submitting the bid for work specified herein and on the Construction Drawings and become familiar with existing site conditions. The Contractor shall evaluate the potential access difficulties and provide all necessary equipment and precautions to comply with the requirements of the Specification. Failure to fully investigate the site conditions shall not relieve the Contractor of the responsibility to adhere to the requirements of this Specification. The Engineer and Owner assume no responsibility for information or opinions concerning site conditions not specifically stated in writing. The site location and specific site features are shown on the Construction Drawings.

### 3.2 Preparation

- A. Provide, erect, and maintain temporary barriers and security devices at locations indicated.
- B. Protect existing landscaping materials, appurtenances, and structures that are not to be demolished. Repair damage caused by demolition operations at no cost to the Owner.
- C. Prevent movement or settlement of adjacent structures. Provide bracing and shoring.

- D. Mark location of utilities. Protect and maintain in safe and operable condition the utilities to remain. Prevent interruption of existing utility service occupied or used facilities, except when authorized in writing by authorities having jurisdiction.
- E. Provide temporary services during interruptions to existing utilities as acceptable to governing authorities.
- F. Provide dumpsters and/or roll off containers for interim placement of demolition debris. Make arrangements for off-site debris removal and disposal. Secure and place containers in a safe manner.
- G. Conduct operations with minimum interference to public or private accesses and facilities. Maintain access and egress at all times and clean or sweep any roadways daily or as required by the governing authority. At such times as deemed necessary by the Owner, dust control shall be provided with sprinkling systems or equipment provided by the Contractor.
- H. Deficiencies or changes in the erosion control plan as it is applied to current conditions shall be brought to the attention of the Engineer for remedial action.

### 3.3 Erosion Control and Slope Protection Implementation

- A. Place erosion control systems as required by local, State, and Federal ordinances.
- B. The Engineer has the authority to limit the surface area of erodible earth material exposed from clearing and grubbing, excavation, borrow, and embankment operations, and to direct the Contractor to provide immediate permanent or temporary pollution control measures.
- C. The Contractor shall be required to incorporate all permanent erosion control features into the project at the earliest practical time to minimize the need for temporary controls.
- D. Cut slopes shall be permanently seeded and mulched as the excavation proceeds to the extent considered desirable and practical.
- E. The temporary erosion control systems installed by the Contractor shall be maintained as directed by the Engineer to control siltation at all times during the life of the Contract. The Contractor shall respond to any maintenance or additional work ordered by the Engineer within a 48-hour period.
- F. Follow the requirements outlined in Section 31 00 00 – Earthwork.

**END OF SECTION**

SECTION 31 23 16.13

EXCAVATION, BACKFILL AND COMPACTION FOR UTILITIES

**1.0 GENERAL**

1.1 Section Includes

- A. Excavating trenches for the installation of utilities.
- B. Backfilling trench with bedding material as specified and indicated and finishing filling trench with suitable material to proposed subgrade.
- C. Compacting backfill materials in an acceptable manner

1.2 Related Sections

- B. Construction Drawings
- C. Section 33 34 00 – Storm Sewer System

1.3 Reference Standards

- A. American Society for Testing and Materials (ASTM) Latest Edition.
  - D 422 Method for Particle Size Analysis.
  - D 698 Test for Moisture-Density Relations of Soils Using 5.5 lb. (2.5 kg) Rammer and 12-inch (304-9 mm) Drop (Standard Proctor).
  - D 1556 Test for Density of soil in Place by the Sand Cone Method.
  - D 1557 Test for Moisture-Density Relations of Soils Using 10-lb (4.5 kg) Rammer and 18-inch (457 mm) Drop (Modified Proctor).
  - D 1559 Test Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus.
  - D 2216 Laboratory Determination of Moisture Content of Soil.
  - D 2487 Classification of Soils for Engineering Purposes.
  - D 2922 Tests for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
  - D 3017 Test for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
  - D 4318 Test for Plastic Limit, Liquid Limit, & Plasticity Index of Soils.
  - C 25 Chemical Analysis of Limestone, Quicklime and Hydrated Lime.
  - C 110 Physical Testing for Quicklime and Hydrated Lime, Wet Sieve Method.

- C 618 Specifications for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.
- C 977 Quicklime and Hydrated Lime for Soil stabilization.
- A. American Association of State Highway and Transportation Officials (AASHTO) latest edition.
- T 88 Mechanical Analysis of Soils.

1.4 Quality Assurance

Independent testing laboratory selected and paid by the Contractor shall be retained to perform construction testing on filling operations and subgrade analysis as specified herein.

1.5 Submittals

- A. Submit shop Drawings or details pertaining to all Site Utilities including materials, methods, equipment, and procedures in accordance with the requirements of the Drawings and these specifications. Do not perform work until required shop drawings have been accepted by Engineer.
- B. The Contractor shall contact all utility companies and determine if additional easements will be required to complete the project. Contractor shall provide written confirmation of the status of all easements to the Owner at the time of the preconstruction conference or no later than ten (10) days prior to the project possession date.
- C. Submit a gradation and certification of the aggregate material that is to be given to the testing laboratory for review.
- D. Submit names, qualifications and resumes of independent testing laboratory and personnel. Laboratory personnel shall be licensed by the State of Massachusetts for those tasks, which they are to perform.

1.6 Project Record Documents

Accurately record actual locations of all subsurface utilities, structures and obstructions encountered.

**2.0 PRODUCT**

2.1 Materials

- A. Bank Run Gravel: Processed sand and gravel free from clay lumps, organic, or other deleterious material, and complying with the gradation requirements of state specifications.
- B. Suitable Backfill Material: In roads, road shoulders, walkways and traveled ways, suitable material for trench backfill shall be the natural material excavated during the course of construction (on or off-site) but shall exclude debris, pieces of pavement, organic matters, top soil, all wet or soft muck, peat or clay, all excavated ledge material, and all rocks over six inches in largest dimension, or



any material which, as determined by the Engineer, will not provide sufficient support or maintain the completed construction in a stable condition.

### 3.0 EXECUTION

#### 3.1 Preparation

- A. Maintain in operating condition existing utilities, activities utilities, and drainage systems encountered in utility installation. Repair any surface or subsurface improvements shown on Drawings.
- B. Verify location, size, elevation, and other pertinent data required to make connections to existing utilities as indicated on Drawings. Contractor shall comply with local codes and regulations.
- C. Over excavates and properly prepares areas of subgrade that are not capable of supporting the proposed systems. These areas are to be stabilized by using suitable materials or selected materials placed and compacted as specified, filter fabrics and/or additional bedding material.
- D. Install dewatering systems that will be required to construct the proposed utilities in a manner that is described herein.

#### 3.2 Excavation

- A. The local utility companies shall be contacted before excavation shall begin. Dig trench at proper width and depth for laying pipe. Cut trench banks practically and remove stones as necessary to avoid point-bearing. Over excavate wet or unstable soil, if encountered, from trench bottom as necessary to provide suitable base for continuous and uniform bedding.
- B. All trench excavation side walls greater than 5 feet in depth shall be sloped, shored, sheeted, braced or otherwise supported by means of the sufficient strength to protect the workmen within them in accordance with the applicable rules and regulations established for construction by the Department of Labor, Occupational Safety and Health Administration (OSHA), and by local ordinances. Lateral travel distance to an exist ladder or steps shall not be greater than 25 feet in trenches 4 feet or deeper.
- C. Perform excavation as indicated for specified depths. During excavations stockpile materials suitable for backfilling in orderly manner far enough from bank of trench to avoid overloading, slides, or cave-ins.
- D. Remove excavated materials not required or not suitable for backfill or embankments and waste as specified. Any structures discovered during excavation(s) shall be disposed of a specified.
- E. Prevent surface water from flowing into trenches or other excavations by temporary grading or other methods, as required. Remove accumulated water in trenches or other excavations by pumping or other acceptable methods.
- F. Open cut excavation with trenching machine or backhoe. Do not use clods for backfill. Dispose of unsuitable material and provide other suitable material at no additional cost to Owner.

- G. Accurately grade trench bottom to provide uniform bearing and support for each section of pipe on bedding material at every point along entire length, except where necessary to excavate for bell holes, proper sealing of pipe joints, or other required connections. Dig bell holes and depressions for joints after trench bottom has been graded. Dig no deeper, longer, or wider than needed to make joint connection properly.
- H. Trench width requirements below the top of the pipe shall not be less than 12" nor more than 18" wider than outside surface of any pipe that is not to be installed to designated elevations and grades. All other trench width requirements for pipe, shall be least practical width that will allow for proper compaction of trench backfill.

### 3.3 Shoring, Sheeting and Bracing

- A. Provide shoring, sheeting, and/or bracing of excavations as required to assure complete safety against collapse of the earth at the side of excavations. Alternatively, lay back excavations to a stable slope
- B. Comply with local safety regulations and/or in the absence thereof with the provisions of the Occupational Safety and Health Act (OSHA).
- C. Remove sheeting and shoring, etc., as backfilling operations progress, taking all necessary precautions to prevent collapse of excavation sides. Where sheeting is required to be left in place, as determined by the Engineer, additional payment will not be made to the Contractor.
- D. Contractor shall use extra care when compacting adjacent to walls. Where walls are buried on both sides, backfill and compaction shall proceed on both sides of the wall so that the difference in top of fill level on either side of the wall shall not exceed two feet (2') at any stage of construction. Where backfill of buried wall is only on one side, only hand operated roller or plate compactors shall be used within a lateral distance of five feet (5') of back of wall for walls less than fifteen feet (15') high and with ten feet (10') of back of wall for walls more than fifteen feet (15') high.

### 3.4 Pipe Bedding

Accurately cut trenches for pipe that is installed to designated elevations and grades to line and grade from 6" below bottom of pipe and to width as specified. Place 6" of bedding material, compact in bottom of trench, and accurately shape to conform to lower portion of pipe barrel. After pipe installation, place 12" bank gravel and compact in maximum 6" layers measured loose over the pipe.

### 3.5 Backfilling

- A. Criteria: Trenches shall not be completely backfilled and joints shall be left exposed until required tests are performed and the utility systems comply with and are accepted by applicable governing authorities. Backfill trenches as specified. If improperly backfilled, reopen to depth required to obtain proper compaction. Backfill and compact, as specified, to properly correct condition in an acceptable manner.

- B. Backfilling: After pipe has been installed, bedded, and tested as specified backfill trench or structure excavation with specified material placed in 12" maximum loose lifts.
- C. Backfill trenches to the contours and elevations shown on the plans with unfrozen materials.
- D. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.

3.6 Compaction

- A. Exercise proper caution when compacting immediately over top of pipes or conduits. Water jetting or flooding is not permitted as method of compaction.
- B. Maintain optimum moisture content of fill materials to attain required compaction density.
- C. An independent testing laboratory (retained by the Contractor) shall perform tests at intervals not exceeding 200'-0" of trench for each lift of compacted trench backfill and furnish copies of test results as specified. Compact to minimum density of 95% of optimum density in accordance with ASTM D 698 (or 92% of optimum density in accordance with ASTM D1557).

**END OF SECTION**

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SECTION 31 32 00  
SOIL STABILIZATION

**1.0 GENERAL**

1.1 Description of Work

- A. This section describes the requirements necessary to conduct the following work.
  - 1. Lime or Electrochemically Stabilized Subgrade
  - 2. Cement Stabilized Subgrade
  - 3. Fly Ash Stabilized Subgrade
  - 4. Geotextile Fabric

1.2 Related Sections and Documents

- A. Section 31 01 10 – Site Preparation
- B. Section 31 00 00 – Earthwork
- C. Construction Drawings.

1.3 Submittals / Project Record Documents

- A. Submit a sample of each material to be used in a 10-pounds airtight container to the testing laboratory.
- B. Submit the name of each materials supplier, the specific type, and source of each material. Any change in source throughout this work requires approval of the Engineer.
- C. Submit the mix design and materials mix ratio that will achieve the specified requirements for soil stabilization according to Federal, State, and local agencies.
- D. Test Reports. Submit certified reports for test(s) required.
- E. Provide all submittals necessary to conform with the requirements of this Specification and as detailed on the Construction Drawings.

1.4 Regulatory Requirements

- A. Authorities. Notify authority/utility owner prior to connecting new work to existing facilities.
- B. The Contractor shall maintain access for vehicular and pedestrian traffic as required for site operations and other construction activities. Utilize temporary striping, flagmen, barricades, warning signs, and warning lights as required and any other applicable work as required by the Massachusetts Highway Department and/or local agencies. Do not close or obstruct roadways, sidewalks, entrances/exits, hydrants, or any utilities without permits.
- C. Follow the applicable safety standards and guidelines as established by OSHA and other applicable local, State, and Federal governing agencies.

- D. Contact DigSafe (888-344-7233) 72 hours prior to commencing any excavation.

#### 1.5 References / Standards

- A. American Society for Testing and Materials (ASTM) latest edition.
  - 1. ASTM C150 Portland Cement
  - 2. ASTM C618 Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
  - 3. ASTM C977 Stabilization Ability of Lime.
  - 4. ASTM D1633 Compressive Strength of Molded Soil-Cement Cylinders.
  - 5. ASTM D698 Laboratory Compaction Characteristics of Soil using Standard Effort.
  - 6. ASTM D1557 Laboratory Compaction Characteristics of Soil using Modified Effort.
- B. American Association of State Highway and Transportation Officials (AASHTO) latest edition.  
M216 Lime for Soil Stabilization
- C. National Lime Association (NLA) latest edition.  
Bulletin 326 Lime Stabilization Construction Manual

#### 1.6 Job Conditions

- A. Conditions existing at time of inspection for bidding purposes will be maintained by Owner in so far as practical.
- B. Variations to conditions or discrepancy in actual conditions as they apply to site preparation operations are to be brought to the attention of the Owner prior to the commencement of any site work.
- C. Structures to be demolished will be discontinued in use and vacated prior to start of work.
- D. Owner assumes no responsibility for the condition of structures to be demolished.

#### 1.7 Environmental Requirements

- A. Do not mix materials in wind in excess of 10 mph or when temperature is below 40° F.
- B. Conform to applicable regulatory procedures when discovering hazardous, special, or contaminated materials.
- C. Comply with governing regulations pertaining to environmental protection.

- D. Acquire all necessary permits, licenses, and/or certificates as required by local, State, and/or Federal agencies prior to the start of the work and thereafter as appropriate.
- E. The Contractor shall remove and dispose all waste materials generated during this work, including waste paints and other related compounds/chemicals. All waste products shall be disposed according to all applicable Federal, State, and local governing agencies.
- F. Any waste classified as a hazardous or toxic waste shall be properly disposed in the appropriate manner to a licensed hazardous waste disposal facility. Verification of proper disposal shall be submitted upon completion of the project.

1.8 Delivery, Storage, and Handling

- A. Deliver materials and products, and store and handle in strict compliance with manufacturer's instructions and recommendations and applicable governing agencies. Protect from all possible damage.
- B. Sequence deliveries to avoid delays, but minimize on-site storage.
- C. Materials shall be stored in areas designated by the Engineer and in a manner that is safe since the facility may still be in use during construction.

1.9 Quality Assurance / Quality Control

Perform work in accordance with Federal, State, and local standards in conjunction with requirements specified herein and on the Construction Drawings.

**2.0 PRODUCTS**

2.1 Materials

- A. Lime or Electrochemical Additive.
- B. Portland Cement.
- C. Fly Ash.
- D. Coarse Aggregate.
- E. Fine Aggregate.
- F. Subsoil-Existing Reused.
- G. Geotextile Fabric for Stabilization.
- H. Mirafi 500X or 600X, or approved equivalent.
  - 1. Phillips 66 Supac 6WS
  - 2. Dupont Typar 3401 and 3601
  - 3. Trevira S1114 and S1120

4. Tensar SS-1 and SS-2

5. Exxon GTF-200 or 350

I. The Contractor shall provide all tools, materials, equipment, and supplies necessary to conduct the work fully to meet the requirements of this Section as detailed on the Construction Drawings.

## 2.2 Mix Design and Testing

A. The Contractor shall utilize equipment capable of excavating subsoil, mixing and placing materials, wetting, or consolidation, and compaction of material.

B. The Contractor shall conduct all applicable mix design and testing work in order to conform to these and State Specifications and the Construction Drawings.

C. Contractor must obtain approval from Engineer.

## 2.3 Configuration

The Contractor shall conduct the work in accordance with the details shown on the Construction Drawings and these Specifications.

# 3.0 EXECUTION

## 3.1 Examination

The Contractor shall visit the site prior to submitting the bid for work specified herein and on the Construction Drawings and become familiar with existing site conditions. The Contractor shall evaluate the potential access difficulties and provide all necessary equipment and precautions to comply with the requirements of the Specification. Failure to fully investigate the site conditions shall not relieve the Contractor of the responsibility to adhere to the requirements of this Specification. The Engineer and Owner assume no responsibility for information or opinions concerning site conditions not specifically stated in writing. The site location and specific site features are shown on the Construction Drawings.

## 3.2 Preparation

A. Obtain Engineer's approval of the mix design and testing requirements before proceeding with the placement.

B. Do not start stabilization without weather and soil conditions being favorable for the successful application of the proposed material.

C. Proof roll subgrade to identify areas in need of stabilization.

## 3.3 Installation / Construction / Demolition

### A. Excavation

1. Excavate subsoil to a depth sufficient to accommodate soil stabilization.

2. Remove lumped subsoil, boulders, and rock that interfere with achieving uniform subsoil conditions.



B. Soil Treatment and Backfilling

1. Lime Stabilized Subgrade. Where indicated on the Construction Drawings, treat prepared subgrade with hydrated lime in accordance with applicable Massachusetts Department of Transportation specifications. Compact to not less than 95% of optimum density as determined by ASTM D698 (or 92% of the optimum density, in accordance with ASTM D1557).
2. Cement Stabilized Subgrade. Where indicated on the Construction Drawings, treat prepared subgrade with Portland cement in accordance with applicable Massachusetts Department of Transportation Specifications. Compact to no less than 95% of optimum density as determined by ASTM D698 (or 92% of the optimum density, in accordance with ASTM D1557).
3. Fly Ash Stabilized Subgrade. Where indicated on the Construction Drawings, treat prepared subgrade with fly ash in accordance with applicable Massachusetts Department of Transportation specifications. Compact to not less than 95% of optimum density as determined by ASTM D698 (or 92% of the optimum density, in accordance with ASTM D1557).
4. Maintain optimum moisture of mix materials to attain required stabilization.
5. Finish surface with plus or minus 1 inch from required elevations.

C. Geotextile Fabric

1. Place fabric in those areas that are shown on the Construction Drawings or in those areas that need additional stabilization prior to the placement of the paving base course.
2. Place fabric specified in the Construction Drawings and these Specifications in accordance with the manufacturer's recommendations.

END OF SECTION

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SECTION 32 12 16

ASHPALT PAVING

**1.0 GENERAL**

1.1 Description of Work

- A. The work of this Section includes, but is not limited to bituminous concrete paving of sidewalks.
- B. Standard Duty bituminous concrete paving for sidewalks shall include the surface course (1.5-inch thick bituminous concrete surface Type I-1), binder course (1.5-inch thick bituminous binder Type I-1), and an 8-inch thick dense graded crushed stone (MHD M1.03.1) subbase as specified herein and on the Construction Drawings.
- C. A reclaimed pavement base course may be considered upon the approval of the Engineer. Reclaimed Base Course will conform to MHD Specification Section 403.

1.2 Related Sections and Documents

- A. Carefully examine the Contract documents for requirements that affect work of this Section.
- B. Commonwealth of Massachusetts Department of Transportation Standard Specifications 2023 Edition
- C. Other specification Sections that directly relate to work of this Section include, but are not limited to the following:
  - 1. Section 31 01 10 – Site Preparation.
  - 2. Section 32 22 26 – Asphalt Base Course.
  - 3. Construction Drawings.

1.3 Submittals / Project Record Documents

- A. Material Certificates. Submit certification by material producer and contractor that all materials conform to the requirements of this Specification and the Massachusetts Department of Transportation specification.
- B. Job Mix Formula. Submit a job mix formula that indicates the definite percentage of each sieve fraction of aggregate, the percentage of bitumen, and the temperature of the completed mixture when discharged from the mixer. Submit all test data used to develop job mix formula. The job mix formula for each mixture shall be in effect until modified in writing by the Engineer. Should changes in sources or character of materials be made, a new job mix formula shall be established before the new material is used.
- C. Design Mix. Before any bituminous concrete paving is constructed, submit actual design mix to the Engineer for review and approval. Design mix submittal shall follow the format as indicated in the Asphalt Institute Manual MS-2, Marshall

Stability Method; and shall include the type/name of the mix, gradation analysis, grade of asphalt cement used, Marshall Stability, flow effective asphalt content (percent), and direct reference to the applicable Massachusetts Highway Department standard specifications sections for each material. The design shall be for a mixture listed in the current edition of the applicable State roadway specifications. Mix designs over 3 years in age will not be accepted by the Owner.

#### 1.4 Regulatory Requirements

- A. Conform to applicable local, State, and Federal codes for dust control and runoff control. Obtain required permits and licenses from authorities. Pay associated fees including but not limited to disposal charges at no additional cost to the Owner.
- B. Notify affected utility companies before starting work and comply with their requirements.
- C. The Contractor shall maintain safe access for vehicular and pedestrian traffic as required for other site operations and construction activities. Utilize temporary striping, flagmen, barricades, warning signs, and warning lights as required and any other applicable work as required by the Massachusetts Department of Transportation and/or local agencies. Do not close or obstruct roadways, sidewalks, entrances/exits, hydrants, or any utilities without permits.
- D. Contact DigSafe (888-344-7233) 72 hours prior to commencing any excavation.

#### 1.5 References / Standards

- A. Follow the applicable safety standards and guidelines as established by OSHA and other applicable local, State, and Federal governing agencies.
- B. Follow the applicable standards and procedures, using the most updated version, necessary to complete the work fully, including but not limited to the following:
  - 1. MS-2 Mix Design Methods for Asphalt Concrete and Other Hot Mix Types – the Asphalt Institute (A1).
  - 2. MS-3-Asphalt Plant Manual – the Asphalt Institute (A1).
  - 3. Hot Mix Asphalt Paving Handbook – US Army Corp. of Engineers, UN-13 (CE MP-ET).
  - 4. MS-19-Basic Asphalt Emulsion Manual – the Asphalt Institute (A1).
  - 5. ASTM D946 – Penetration-Graded Asphalt Cement for Use in Pavement Construction.
  - 6. ASTM D1188 – Bulk Specific Gravity and Density of Compacted Bituminous Mixtures using Paraffin-Coated Specimens.
  - 7. ASTM D1559 – Resistance to Plastic Flow of Bituminous Mixtures using Marshall Apparatus.
  - 8. ASTM D2397 – Cationic Emulsified Asphalt.

9. ASTM D2726 – Bulk Specific Gravity and Density of Non-Absorptive Compacted Asphaltic Mixtures.
10. ASTM D3381 – Viscosity-Graded Asphalt Cement for use in Pavement Construction.

#### 1.6 Job Conditions

- A. Weather. Perform work only when existing and forecasted weather conditions are within the limit established by referenced standards. Apply prime and tack coats and construct bituminous concrete paving only when ambient temperature is above 40°F for 12 hours immediately prior to application. When air temperatures fall below 50°F, extra precautions shall be taken in drying the aggregates, controlling the temperatures, and placing and compacting the mixtures.
- B. Substrates. Proceed with work only when substrate construction and penetrating work are complete and gravel borrow base course is dry.
- C. Owner assumes no responsibility for condition of structures to be demolished.
- D. Conditions existing at time of inspection for bidding purposes will be maintained by Owner in so far as practicable. Variations within structures may occur by Owner's removal and salvage operations prior to the start of the demolition work.

#### 1.7 Environmental Requirements

- A. Conform to applicable regulatory procedures when discovering hazardous, special, or contaminated materials.
- B. Comply with governing regulations pertaining to environmental protection.
- C. Acquire all necessary permits, licenses, and/or certificates as required by local, State, and/or Federal agencies prior to the start of the work and thereafter as appropriate, at no additional cost to the Owner.
- D. The Contractor shall remove and dispose all waste materials generated during this work, including waste paints and other related compounds/chemicals. All waste products shall be disposed according to all applicable Federal, State, and local governing agencies.
- E. Any waste classified as a hazardous or toxic waste shall be disposed in the appropriate manner to a licensed hazardous waste disposal facility. Verification of proper disposal shall be submitted upon completion of the project.

#### 1.8 Delivery, Storage, and Handling

- A. Items of salvageable value to Contractor may be removed from the site. Storage or sale of removed items on the site will not be permitted and shall not interfere with any other work specified in the contract documents.
- B. Explosives shall not be brought to the site or used without written consent of authorities having jurisdiction. Such written consent will not relieve Contractor of total responsibility for injury to persons or for damage to property due to blasting

operations. The performance of any required blasting shall comply with governing regulations.

- C. As specified herein, the Contractor shall manage, deliver, store, and handle all materials in accordance with manufacturer's requirements and applicable governing agencies.

1.9 Quality Assurance / Quality Control

- A. The appropriate QA/QC measures shall apply throughout the entire work of this project.
- B. Independent Testing. The independent testing laboratory, selected and paid by the contractor, may be retained to perform construction testing of in-place bituminous concrete courses for compliance with the requirements for thickness and surface smoothness. Bituminous surface and base courses shall be randomly cored at a minimum rate of 1 core for every 20,000 square feet of paving. However, no less than 6 cores shall be obtained. Coring holes shall be immediately filled with full-depth asphalt or with concrete. Bituminous concrete pavement samples shall be tested for conformance with the approved mix design.
- C. Grade Control. Establish and maintain required lines and elevations.
- D. Thickness. In-place compacted thickness shall not be less than the thickness specified on the Construction Drawings. Areas of deficient paving thickness shall receive a tack coat and a minimum 1-inch overlay, or shall be removed and replaced to the proper thickness at the discretion of the Owner until the specified thickness of the course is met or exceeded. This corrective work shall be at no additional expense to the Owner.
- E. Surface Smoothness. Testing shall be performed on the finished surface of each asphalt concrete course for smoothness, using a 10-foot straightedge applied parallel with, and at right angles to the centerline of the paved areas. The result of these tests shall be made available to the Owner upon request. Surfaces will not be acceptable if they exceed the following tolerance for smoothness:

Base Course Surface.	¼ inches
Wearing Course Surface	¼ inches

- F. Compaction. Field density test for in-place materials shall be performed by examination of field cores in accordance with one of the following standards.
  1. Bulk specific gravity of paraffin-coated specimens. ASTM D1189.
  2. Bulk specific gravity using saturated surface dry specimens. ASTM D2726.
  3. Rate of testing shall be one core per 20,000 square feet of pavement, with a minimum of 6 cores. Cores shall be cut from areas representative of the project.
  4. Areas of insufficient compaction shall be delineated, removed, and replaced in compliance with the Specifications at no expense to the Owner.

## 2.0 PRODUCTS

### 2.1 Materials

- A. Provide asphalt-aggregate mixture as recommended by the Massachusetts Department of Transportation specifications to suit project conditions. Use locally available materials and gradations, which meet Massachusetts Highway Department specifications and exhibit a satisfactory record on previous installations.
- B. Asphalt Concrete. Provide bituminous concrete to the requirements of the State specifications.
- C. Aggregates. Provide coarse and fine aggregates which conform to the requirements of the State specifications.
- D. Mineral Filler. Provide Portland cement, rock or slag dust, hydraulic cement, or other inert material complying with AASHTO M-17/ASTM D 242 which conform to the requirements of the State specifications.
- E. Asphalt Cement. Provide asphalt cement which conforms to the requirements of the State specifications.
- F. Prime Coat. Provide medium curing cut-back asphalt, or an asphalt-penetrating prime coat (consisting of either MC-30 or SS-1h), which conforms to the requirements of the State specifications.
- G. Tack Coat. Provide emulsified asphalt which conforms to the requirements of the State specifications, diluted with one part water to one part asphalt following AASHTO M140/ASTM D997, or AASHTO M208/ASTM D2397, SS-1h, CSS-1, or CSS-1h.
- H. Joint Sealer. Provide hot-poured joint sealer that conforms to the requirements of the State Specifications.
- I. The Contractor shall provide all tools, materials, equipment and supplies necessary to conduct the work fully to meet the requirements of this Section as detailed on the Construction Drawings.
- J. Asphalt Cement. Comply with AASHTO M-226/ASTM D3381; Table 2 AC-10, AC-20 or AC-30, AC-80, viscosity grade, depending on local mean annual air temperature, as charted below.

<u>Temperature Condition</u>	<u>Asphalt Grades</u>
Cold, mean annual air temperature ≤ 7 degrees C (45 degrees F)	AC-10 85/100 pen.
Warm, mean annual air temperature between 8 degrees C (45 degrees F) and 23 degrees C (75 degrees F)	AC-20 60/70 pen.
Hot, mean annual air temperature ≥ 24 degrees C (75 degrees F)	AC-30

Final acceptance of the proper grade of Asphalt cement shall be made by the Engineer.

2.2 Mix Design and Testing

- A. Provide asphalt aggregate mixture which meets the requirements of the State specifications for binder course and top course. Maximum mixing temperature shall be 330° F.
- B. MassDOT Processed Gravel for Subbase M1.03.1

The gradation shall meet the following requirements:

**Table M1.03.1-1: Gradation Requirements for Processed Gravel for Subbase**

Sieve Designation	Percent Passing
3 in.	100
1 ½ in.	70-100
¾ in.	50-85
No. 4	30-60
No. 200	0-10

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C. M1.09.0: Reclaimed Pavement Borrow Material

Reclaimed Pavement Borrow material shall consist of crushed asphalt pavement and/or crushed cement concrete, and gravel borrow meeting M1.03.0: Gravel Borrow. The material shall be free of loam, clay, and deleterious materials such as brick, reinforcing steel, wood, paper, plaster, lathing, and building rubble, etc.

The coarse aggregate shall have a percentage of wear not greater than 50 as measured by the Los Angeles Abrasion Test.

Gradation requirements shall be determined by AASHTO T 311 except the material shall not be oven dried. It shall be air dried, fan dried at low speed, or other low temperature heat so as not to liquefy the asphalt or cause the asphalt to adhere to the sieves. Water used for the No. 200 sieve analysis shall be cold tap water.

The gradation shall meet the following requirements:

**Table M1.09.0-1: Gradation Requirements for Reclaimed Pavement Borrow**

Sieve Designation	Percent Passing
3 in.	100
1 ½ in.	70-100
¾ in.	50-85
No. 4	30-60
No. 50	8-24
No. 200	0-10

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D. M3.07.0: HMA for Driveways, Sidewalks, Berm, and Curb

HMA mixtures for driveways, sidewalks, berm, and curb shall conform to the master ranges in Table M3.06.6-1. The PGAB shall conform to M3.01.1: Standard Asphalt Binder Grade. The aggregate shall conform to M3.06.2: Aggregate for Hot Mix Asphalt. The Contractor shall submit a JMF prior to production which shows the target aggregate gradation and PG asphalt binder content for each HMA mixture for driveways, sidewalks, berm, and curb.

With the approval of the Engineer, the Contractor may substitute a MassDOT approved 9.5 mm or 12.5 mm Superpave Surface Course mixture (Traffic Level 1 or 2) for Driveways and Sidewalks.

The composition limits in Table M3.07.0-1 are HMA mix design master ranges for aggregate gradation and asphalt binder content. The JMF for each HMA mixture type shall establish a single percentage of aggregate passing each required sieve size, and a single percentage of asphalt binder material to be added to the aggregate.

**Table M3.07.0-1: Master Ranges for HMA for Driveways, Sidewalks, Berm, and Curb**

Mix Type	Control Points (% Passing)			
	Driveways, Sidewalks, and Berm		Berm and Curb Only	
Sieve (in.)	Min	Max	Min	Max
1	-	-	-	-
¾	100	-	-	-
½	95	100	100	-
⅜	87	93	87	93
#4	57	69	62	73
#8	41	45	52	55
#16	30	36	40	45
#30	21	25	28	34
#50	14	17	18	23
#100	9	12	10	14
#200	4	5	6	6
P <sub>b</sub> , %	6.0	6.6	7.4	7.6

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E. M3.06.4: Hot Mix Asphalt Mixture Design

The Contractor shall be responsible for development of all HMA mixture designs. All HMA surface courses, intermediate courses, base courses, leveling courses, bridge surface courses, and bridge protective courses shall be supported by volumetric mixture designs using the Superpave mixture design system. All Superpave HMA designs shall be developed in accordance with the following AASHTO standards, as modified herein:

1. AASHTO M 323
2. AASHTO R 35
3. AASHTO T 312

OGFC and ARGG mixtures shall be designed in accordance with Subsections M3.06.4: Hot Mix Asphalt Mixture Design, Parts G and H, respectively.

Each Superpave HMA mixture shall be designed in accordance with the volumetric mixture design specifications contained in AASHTO M 323 and procedures contained in AASHTO R 35, as modified herein. Each HMA mixture LTMF shall be tested for conformance with the following volumetric properties:

1. Air Voids at Ndesign (Va)
2. Voids in the Mineral Aggregate at Ndesign (VMA)
3. Voids Filled with Asphalt at Ndesign (VFA)
4. Fines to Effective Asphalt Ratio (P0.075 / Pbe)

The volumetric property test results shall be submitted with the LTMF for each Superpave HMA mixture. The required minimum or maximum criteria for each of the volumetric property tests are specified in Table M3.06.4-3, Table M3.06.4-4, and Table M3.06.4-5.

**Table M3.06.4-1: Superpave Aggregate Gradation Control Points**

Nominal Maximum Aggregate Size - Control Points (% Passing)												
Sieve	#4		3/8 in.		1/2 in.		3/4 in.		1 in.		1 1/2 in.	
(in.)	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
2											100	
1.5									100		90	100
1							100		90	100		90
3/4					100		90	100		90		
1/2	100		100		90	100		90				
3/8	95	100	90	100		90						
#4	90	100		90								
#8			32	67	28	58	23	49	19	45	15	41
#16	30	55										
#30												
#50												
#100												
#200	6	13	2	10	2	10	2	8	1	7	0	6

Last Modified: 02/06/2024 at 11:49PM EST

2.3 Configuration

The configuration shall be as shown on the Construction Drawings.

**3.0 EXECUTION**

3.1 Examination

The Contractor shall visit the site prior to submitting the bid for work specified herein and on the Construction Drawings and become familiar with existing site conditions. The Contractor shall evaluate the potential access difficulties and provide all necessary equipment and precautions to comply with the requirements of the Specification. Failure to fully investigate the site conditions shall not relieve the Contractor of the responsibility to adhere to the requirements of this Specification. The Engineer and Owner assume no responsibility for information or opinions concerning site conditions not specifically stated in writing. The site location and specific site features are shown on the Construction Drawings.

3.2 Preparation

- A. Saw Cut Existing Pavement. Saw cut existing pavement, at locations shown on the Construction Drawings or as directed, in a neat, straight, vertical line for the full depth of the pavement and the base. After this has been done, cut back the existing pavement 12 inches from the edge of the saw cut line to a depth of 1½ inches. Fill cracks in the entire cut-back area with joint sealant, as appropriate.
- B. Base Inspection. Proof-roll gravel borrow base course to check for unstable areas. Do not begin work over unsuitable base. Remove loose material from compacted sub-base immediately before applying any herbicide.
- C. Equipment. Maintain equipment in satisfactory operating condition and correct breakdowns in a manner that will not delay or be detrimental to progress of paving operations.

3.3 Installation / Construction / Demolition

- A. Tolerances
  - 1. Thickness. Provide in-place compacted thickness within the following tolerances:

Binder Course	$\pm \frac{1}{4}$ inch
Top Course	$\pm \frac{1}{4}$ inch
  - 2. Grading and Ponding. Provide uniformly-sloped and graded surfaces so that water drains away. No ponding of water is permitted. Finished surfaces shall be true to the Construction Drawings within  $\pm 1/8$  inches when tested with a 10-foot straightedge.
  - 3. Line and Grade. In addition to tolerances described above, final paved areas shall be achieved as required on the Construction Drawings within the tolerances established by the State specifications.
- B. Patching and Repair

Last Modified: 02/06/2024 at 11:49PM EST

1. Puddles. Repair areas which pond water in strict compliance with the specifications of the Massachusetts Department of Transportation.
2. Repair. Repair damaged areas to eliminate all evidence of repair. Cut out, remove, and replace work with fresh, hot bituminous concrete. Compact and roll to maximum density and smoothness.
3. As part of the work of this Section, the Contractor shall provide patching, leveling, and/or repair of pre-existing surface defects as directed by the Engineer, and as detailed on the Construction Drawings. This work may also include replacing sub-base and/or repairing sub-grade that shall be performed as specified in Section 31 00 00.

C. Bituminous Concrete Placement

1. Prime Coat. Apply prime coat to prepared gravel base course at rate of  $\frac{1}{4}$  to  $\frac{1}{2}$  gallon per square yard. Apply material to penetrate and seal base course, but do not flood coat. Cure as necessary to permit evaporation of volatiles.
2. Tack Coat. Apply tack coat to binder course, other previously-paved surfaces, and vertical surfaces abutting new pavement at a rate of 0.05 to 0.10 gallons per square yard of surface. Allow to dry until ready to receive paving.
3. Apply to contact surfaces of previously constructed bituminous concrete base courses or asphalt concrete and surfaces abutting or projecting into asphalt concrete pavement.
4. Apply tack coat to bituminous concrete base course prior to installation of the bituminous concrete wearing course. Apply emulsified asphalt tack coat between each lift or layer of full depth bituminous concrete.
5. Placing Mix. Place bituminous mixture in two layers – binder course and top course with total finished thickness as indicated on the Construction Drawings. Place asphalt concrete mixture on completed compacted subgrade surface, spread, and strike off. Then, spread the mixture at the following minimum temperatures:
  - a. When ambient air temperature is between 40°F and 50°F, place mixture with temperature at 285°F.
  - b. When ambient air temperature is between 50°F and 60°F, place mixture with temperature at 280°F.
  - c. When ambient air temperature is higher than 60°F, place mixture with temperature at 275°F.
  - d. Complete base course before beginning topping layer. Apply tack coat between layers and between each day's work.
  - e. Whenever possible, all pavement shall be spread by a finish machine. In inaccessible or irregular areas, pavement may be placed by hand methods. The hot mixture shall be spread uniformly

to the required depth with hot shovels and rakes. After spreading, the hot mixture shall be carefully smoothed to remove all segregated course aggregate and rake marks. Rakes and lutes used for hand spreading shall be of the type designed for use on asphalt mixtures. Loads shall not be dumped faster than they can be properly spread. Workers shall not stand on the loose mixture while spreading.

- f. Paving Machine Placement. Apply successive lifts of bituminous concrete in transverse directions with the surface course placed in the direction of surface water flow. Place in typical strips no less than 10.0 feet wide.
- g. Joints. Make joints between old and new pavements, or between successive day's work, to ensure continuous bond between adjoining work. Construct joints to have the same texture, density, and smoothness as other sections of asphalt concrete course. Clean contact surfaces and then apply tack coat.

D. Rolling and Compaction

- 1. Proof Roll. Begin proof rolling mixture when asphalt concrete can bear weight of roller without excessive displacement. Roll at least 3 times and provide a smooth, compact, uniform surface free of roller marks. After first rolling, repair displaced areas as needed with additional hot material. Roll at least 2 additional times to thoroughly compact concrete to maximum density and to remove roller marks. Pavement thickness shall be as indicated on the Construction Drawings on as-finished thickness, after roller compaction.
- 2. The mixture, after being spread, shall be thoroughly compacted by rolling as soon as it will bear the weight of the rollers without undue displacement. The number, weight, and types of rollers and sequences of rolling operations shall be such that the required density and surface are consistently attained while the mixture is in a workable condition.
- 3. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.
- 4. Breakdown Rolling. Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check the surface after breakdown rolling and repair displaced areas by loosening and filling, if required, with hot material.
- 5. Second Rolling. Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been thoroughly compacted.
- 6. Finish Rolling. Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained maximum density.
- 7. Patching. Remove and replace paving areas mixed with foreign materials and defective areas. Cut out such areas and fill with fresh, hot asphalt concrete. Compact by rolling to maximum surface density and smoothness.

E. Cleaning and Protection

Provide temporary protection to ensure that work remains free of dirt, damage, or deterioration at time of final acceptance. Do not permit vehicular traffic until paving has cooled and is ready to receive traffic. Remove protection and clean as necessary immediately before final acceptance.

F. Temporary Paving

1. Following trench backfill, the Contractor shall place temporary bituminous concrete pavement between the edges of the existing pavement. Temporary pavement shall consist of a minimum of 1½ inches of hot bituminous concrete mix measured after compaction. No trench shall be left unpaved over the weekend.
2. The temporary pavement shall be repaired as often as necessary including the placement of additional asphalt to maintain the surface in good repair and flush with the existing pavement until replaced with permanent pavement.
3. The work shall be conducted in accordance with State specifications by the Massachusetts Department of Transportation.

END OF SECTION

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SECTION 32 13 13  
CONCRETE PAVING

**1.0 GENERAL**

1.1 Section Includes:

- A. Preparation and placement of Portland cement concrete sidewalk areas.
- B. Preparation and placement of Portland cement concrete door entrances.

1.2 Related Sections

- A. Section 31 23 13 - Excavation, Backfill, Compaction for Pavement
- B. Section 32 22 26 – Asphalt Base Course
- C. Section 32 16 00 – Curbs, Sidewalks, Islands and Ramps
- D. Construction Drawings

1.3 Reference Standards

- A. American Concrete Institute (ACI) latest edition
  - 1. 211.1 Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete.
  - 2. 304R Guide for Measuring, Mixing, Transporting, and Placing Concrete.
  - 3. 305R Hot Weather Concreting.
  - 4. 306R Standard Specification for Cold Weather Concreting.
  - 5. 308 Standard Practice for Curing Concrete.
- B. American Society for Testing and Materials (ASTM) latest edition
  - 1. A185 Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
  - 2. A615 Deformed and Plain Billet-Steel for Concrete Reinforcement.
  - 3. C33 Concrete Aggregates.
  - 4. C78 Method for Flexural Strength Concrete (Using Simple Beam with Third-point Loading).
  - 5. C94 Ready-Mixed Concrete.
  - 6. C143 Method for Slump of Hydraulic Cement Concrete.
  - 7. C150 Portland Cement.

8. C171 Sheet Material for Curing Concrete.
9. C231 Air-Content of Freshly Mixed Concrete by the Pressure Method.
10. C260 Air-Entraining Admixtures for Concrete.
11. C309 Liquid Membrane-Forming Compounds for Curing Concrete.
12. C494 Chemical Admixtures for Concrete.
13. C920 Standard Specification for Elastomeric Joint Sealants.
14. D994 Preformed Expansion Joint Filler for Concrete (Bituminous).
15. D1751 Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
16. D2628 Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements.

C. State Highway Department Standard Specifications

1.4 Quality Assurance

- A. Establish and maintain required lines and elevations.
- B. Check surface areas at intervals necessary to eliminate ponding areas. Remove and replace unacceptable paving as directed by Owner.

1.5 Submittals

- A. Submit materials certificate from materials producer and Contractor, certifying that materials comply with, or exceed, requirements specified herein to the Engineering Consultant of Record and the independent testing laboratory for review and approval and within 7 calendar days after receipt of Notice-to-Proceed, submit for approval, certified laboratory test data or manufacturers certificates and data for the following items:
  1. Portland cement concrete mix.
  2. Aggregate gradations.
  3. Preformed expansion joint filler.
  4. Field molded/poured sealant.
  5. Dowel bars.
  6. Expansion sleeves.
  7. Tie bars.
  8. Reinforcing steel bars.
  9. Welded wire fabric.

10. Air entraining admixtures.
11. Water-reducing and set-retarding admixtures (if used).

#### 1.6 Project Conditions

Maintain access for vehicular and pedestrian traffic as required for other construction activities. Utilize temporary striping, flagmen, barricades, warning signs, and warning lights as required.

## 2.0 PRODUCTS

### 2.1 Materials

- A. Forms: Steel, wood, or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects. Use flexible spring steel forms or laminated boards to form radius bends as required. Coat forms with nonstaining type of coating that will not discolor or deface surface of concrete.
- B. Welded Wire Mesh: Welded plain cold-drawn steel wire fabric, ASTM A 185. Furnish in flat sheets.
- C. Reinforcing Bars: Deformed steel bars, ASTM A 615, Grade 60.
- D. Portland Cement: Shall conform to ASTM C150, Type I
- E. Joint Fillers: Resilient premolded bituminous impregnated fiberboard units complying with ASTM D994, D1751, D2628; FS HH-F-341, Type II, Class A or approved equal.
- F. Joint Sealants: Conforming to ASTM C920, non-priming, pourable, self-leveling polyurethane. Acceptable sealants are Sonneborn "SL1", Sonneborn "SL2", Sonneborn "Sonomeric 1", Sonneborn "Sonomeric 2", Mameco "Vulkem 245", or Woodmont Products "Chem-Caulk" or approved equal.
- G. Aggregate: Shall conform to ASTM C33.
- H. Water: Shall be clean and potable
- I. Dowel Bars: Shall conform to ASTM A615, grade 60, and plain steel bars.
- J. Air Entraining Mixture: Shall conform to ASTM C260 (Sika AER by Sika Corporation, Air Mix by the Euclid Chemical Corporation or approved equal).
- K. Curing Compound: Shall conform to ASTM C309 (Hydrocide by Sonneborn of Rexnord Chemical Products, Inc., and Polyseal 4 in 1 by Chem Masters Corporation or approved equal.
- L. Joint Backup Rods: Shall be CCEVA Rod 100 by E-Poxy Industrials, Inc., Sealtight BACKER ROPE by W.R. Meadows, Inc. or approved equal.

## 2.2 Mix Design and Testing

- A. Mix concrete and deliver in accordance with ASTM C94.
- B. Design mix to produce normal weight concrete consisting of Portland cement, aggregate, water-reducing admixture, air-entraining admixture, and water to produce following properties:
  - 1. Compressive Strength: 4,500 psi, minimum at 28 days, unless otherwise indicated on Construction Drawings.
  - 2. Slump Range: 2"-4" for hand placed concrete, 1-1/4" to 3" for machine placed (slipform) concrete.
  - 3. Air Entrainment: 5 to 8 percent

## 3.0 EXECUTION

### 3.1 Preparation

- A. Proofroll prepared base material surface to check for unstable areas. Paving work shall begin only after unsuitable areas have been corrected and are ready to receive paving.
- B. Remove loose material from compacted base material surface to produce firm, smooth surface immediately before placing concrete.

### 3.2 Installation

#### A. Form Construction

- 1. Set forms to required grades and lines, rigidly braced and secured.
- 2. Install sufficient quantity of forms to allow continuance of work and so that forms remain in place minimum of 24 hours after concrete placement.
- 3. Check completed formwork for grade and alignment to following tolerances:
  - a. Top of forms not more than 1/8-inch in 10'-0"
  - b. Vertical face on longitudinal axis, not more than 1/4-inch in 10'-0"
- 4. Clean forms after each use and coat with form release agent as often as required to ensure separation from concrete without damage.

- B. Reinforcement: Fasten reinforcing bars or welded wire fabric (if required) accurately and securely in place with suitable supports and ties. Remove from reinforcement all dirt, oil, loose mill scale, rust, and other substances that will prevent proper bonding of the concrete to the reinforcement.
- C. Concrete Placement
1. Concrete may be mixed and placed when the air temperature in the shade and away from artificial heat is a minimum of 35 degrees F and rising. Hot and cold weather concreting shall be in accordance with ACI 305R and 306R, respectively.
  2. Do not place concrete until base material and forms have been checked for line and grade. Moisten base material if required to provide uniform dampened condition at time concrete is placed. Concrete shall not be placed around manholes or other structures until they are at required finish elevation and alignment.
  3. Place concrete using methods that prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Consolidate with care to prevent dislocation of reinforcing, dowels, and joint devices.
  4. Deposit and spread concrete in continuous operation between transverse joints, as far as possible. If interrupted for more than 1/2 hour, place construction joint.
- D. Joint Construction: Construct expansion, weakened-plane control (contraction), and construction joints straight with face perpendicular to concrete surface. Construct transverse joints perpendicular to centerline, unless otherwise detailed.
1. Weakened-Plane Control or Contraction Joints: Provide joints at spacing of 15'-0" on centers, maximum each way. Construct control joints for depth equal to at least 1/4 of the concrete thickness, as follows:
    - a. Form tooled joints in fresh concrete by grooving top with recommended tool and finishing edge with jointer.
    - b. Form sawed joints using powered saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut joints into hardened concrete as soon as surface will not be torn, abraded, or otherwise damaged by cutting action.
  2. Construction Joints: Place construction joints at end of placements and at locations where placement operations are stopped for period of more than 1/2 hour, except where such placements terminate at expansion joints. Construct joints in accordance with standard details.
  3. Transverse Expansion Joints: Locate expansion joints at maximum of 180'-0" on centers, maximum each way unless otherwise shown on the Construction Drawings. Provide premolded joint filler for expansion joints abutting concrete curbs, catch basins, manholes, inlets, structures, sidewalks, and other fixed objects.

4. **Butt Joints:** For joints against existing pavement, place 16" long dowels eight inches into holes drilled into center of existing slab. Epoxy dowels into holes with approved epoxy compound. Place dowels prior to concrete placement for new concrete. Dowel spacing to be 24" on center unless otherwise shown on Construction Drawings. Saw joint and fill with joint sealer.
- E. **Joint Fillers:** Extend joint fillers full-width and depth of joint, and not less than 1/2-inch or more than 1-inch below finished surface where joint sealer is indicated. Furnish joint fillers in 1-piece lengths for full width being placed, wherever possible. Where more than 1 length is required, lace or clip joint filler sections together.
- F. **Joint Sealants:** Joints shall be sealed with approved exterior pavement joint sealants and shall be installed in accordance with manufacturer's recommendations.

### 3.3 Concrete Finishing

- A. After striking off and consolidating concrete, smooth surface by screening and floating. Adjust floating to compact surface and produce uniform texture. After floating, test surface for trueness with 10'-0" straightedge. Distribute concrete as required to remove surface irregularities and refloat repaired areas to provide continuous smooth finish.
- B. Work edges of slabs and formed joints with edging tool, rounding edge to 1/2-inch radius. Eliminate tool marks on concrete surface. After completion of floating and troweling, when excess moisture or surface sheen has disappeared, complete surface finishing, as follows:
  1. **Inclined Slab Surfaces:** Provide coarse, nonslip finish by scoring surface with stiff-bristled broom perpendicular to flow of traffic so as to produce regular corrugations not over 1/16 of an inch deep.
  2. **Paving:** Provide coarse, nonslip finish by scoring surface with stiff-bristled broom perpendicular to flow of traffic so as to produce regular corrugations not over 1/16 of an inch deep.
- C. Do not remove forms for 24 hours after concrete has been placed. After form removal, clean ends of joints and point up minor honeycombed areas. Remove and replace areas or sections with major defects, as directed by Owner.
- D. Protect and cure finished concrete paving using acceptable moist-curing methods, more particularly described in "water-curing" section of ACI 308.

### 3.4 Cleaning and Adjusting

- A. Sweep concrete pavement and wash free of stains, discolorations, dirt, and other foreign material just prior to final inspection.
- B. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials.

3.5 Field Quality Control

The independent testing laboratory will randomly core pavement at minimum rate of 1 core per 20,000 sq. ft of pavement, with minimum of 3 cores from heavy-duty areas and 3 cores from light duty areas. Core will be tested for thickness and quality of aggregate distribution. Core holes shall be patched immediately with Portland cement concrete and shall be finished to provide level surface as specified herein.

**END OF SECTION**

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SECTION 32 16 00

CURBS, SIDEWALKS, ISLANDS and RAMPS

**1.0 GENERAL**

1.1 Description of Work

- A. Granite Curbs
- B. Bituminous Asphalt Sidewalk
- C. Bituminous Concrete Paving
- D. Concrete Sidewalks
- E. Traffic Islands
- F. Wheelchair Ramps
- G. Construct curbs, sidewalks, islands, and ramps as detailed on the Construction Drawings and by the Engineer.

1.2 Related Sections and Documents

- A. Section 02 40 00 – Demolition
- B. Section 31 01 10 - Site Preparation
- C. Section 31 00 00 – Earthwork
- D. Section 31 25 00 - Slope Protection and Erosion Control
- E. Section 32 22 26 - Asphalt Base Course
- F. Construction Drawings

1.3 Submittals / Project Record Documents

- A. Submit complete information on aggregates and cement concrete materials and mixtures, as specified in Section 03 30 00.
- B. Submit information on proposed method of providing tactile treatment at wheelchair ramp surfaces, including manufacturer's information and samples of manufactured products.

1.4 Regulatory Requirements

- A. Contractor shall maintain access for vehicular and pedestrian traffic as required for other site operations and construction activities. Utilize temporary striping, flagmen, barricades, warning signs, and warning lights as required and any other applicable work as required by the Massachusetts Department of Transportation and/or local agencies. Do not close or obstruct roadways, sidewalks, entrances/exits, hydrants, or any utilities without permits.
- B. Follow the applicable safety standards and guidelines as established by OSHA and other applicable local, State, and Federal governing agencies.
- C. Contact DigSafe (888-344-7233) 72 hours prior to commencing any excavation.

1.5 References

- A. Follow the applicable safety standards and guidelines as established by OSHA and other applicable local, State, and Federal governing agencies.
- B. Americans with Disabilities Act requirements, January 1992.
- C. Follow the applicable standards and references, using the most updated version necessary to complete the work fully including but not limited to the following:

ACI 304	Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.
ANSI/ASTM D1751	Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction – Nonextruding and Resilient Bituminous Types.
ANSI/ASTM D1752	Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction – Nonextruding and Resilient Nonbituminous Types.
ASTM C33	Concrete Aggregates.
ASTM C94	Ready-Mixed Concrete.
ASTM C150	Portland Cement.
ASTM C260	Air-Entraining Admixtures for Concrete.
ASTM C309	Liquid Membrane-Forming Compounds for Curing Concrete.
ASTM C494	Chemical Admixtures for Concrete.
FS TT-C-800	Curing Compound Concrete for New and Existing Surfaces.
ACI 308-81	(3.3.4,D)
AASHTO M153, Type 1	(2.1,E)

1.6 Job Conditions

- A. Structures to be demolished will be discontinued in use and vacated prior to start of work.
- B. The Owner assumes no responsibility for condition of structures to be demolished.
- C. Conditions existing at time of inspection for bidding purposes will be maintained by Owner in so far as practicable. Variations within structures may occur by the Owner's removal and salvage operations prior to the start of the work.

1.7 Environmental Requirements

- A. Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.
- B. Comply with governing regulations pertaining to environmental protection.
- C. Any waste classified as a hazardous or toxic waste shall be disposed in the appropriate manner to a licensed hazardous waste disposal facility. Verification of proper disposal shall be submitted upon completion of the project.
- D. Acquire all necessary permits, licenses, and/or certificates as required by local, State, and /or Federal agencies prior to the start of the work and thereafter as appropriate, at no additional cost to the Owner.
- E. The Contractor shall remove and dispose all waste materials generated during this work, including waste paints and other related compounds/chemicals. All waste products shall be disposed according to all applicable Federal, State, and local governing agencies.

1.8 Delivery, Storage, and Handling

- A. Explosives shall not be brought to the site or used without written consent of authorities having jurisdiction. Such written consent will not relieve Contractor of total responsibility for injury to persons or for damage to property due to blasting operations. The performance of any required blasting shall comply with governing regulations.
- B. As specified herein, the Contractor shall manage, deliver, store, and handle all materials in accordance with manufacturer's requirements and applicable governing agencies.
- C. Items of salvageable value to the Contractor may be removed from the site. Storage or sale of removed items on the site will not be permitted and shall not interfere with any other work specified in the Contract documents. Sloped granite curbing found on site within the limits of work shall be reused on site.

1.9 Quality Assurance / Quality Control

- A. The appropriate QA/QC measures shall apply throughout the entire work of this project.
- B. Conform to the requirements of the 28-day strength testing for the 4,500 PSI concrete.

## 2.0 PRODUCTS

### 2.1 Materials

- A. The Contractor shall provide all tools, materials, equipment, and supplies necessary to conduct the work fully to meet the requirements of this Section as detailed on the Construction Drawings.
- B. Forms. Steel, wood, or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects. Use flexible spring steel forms or laminated boards to form radius bends as required. The forms shall be of a depth equal to the depth of curbing or sidewalk, and so designed as to permit secure fastening together at the tops. Coat forms with non-staining type coating that will not discolor or deface surface of concrete.
- C. Concrete Materials. Comply with requirements of applicable Sections for concrete materials, admixtures, bonding materials, curing materials, and others as required.
- D. Vertical Granite Curb. Provide vertical granite curbing within Town roadway layout. Provide curbing within site proper limits as shown on the construction documents.
- E. Precast Concrete Curb. Shall be concrete curb type VA – precast conforming to the requirements of MassDOT Standard Specifications.
- F. Cape Cod Berm. Provide curbing within site proper limits as shown on the construction documents.
- G. Joint Fillers. Resilient pre-molded bituminous impregnated fiberboard units complying with ASTM D 1751 S HH-F-341, Type II, Class A, or AASHTO M 153, Type I.
- H. Joint Sealers. Non-priming, pourable, self-leveling polyurethane. Acceptable sealants are Sonneborn “Sonolastic Paving Joint Sealant,” Sonneborn “Sonomeric CT 1 Sealant,” Sonneborn “Sonomeric CT 2 Sealant,” Mameco “Vulken 45,” or Woodmont Products “Chem-Caulk,” or equivalent.
- I. Crushed Stone, Bark Mulch, and Loam. Provide crushed stone, bark mulch, and loam. Comply with the requirements of the applicable Sections for landscaping and as specified on the Construction Drawings.
- J. Surface Treatment at Wheelchair Ramps. At locations indicated on the Construction Drawings, furnish and install detectable warning surface that meets the applicable requirements of the ADA.

### 2.2 Mix Design and Testing

- A. Concrete mix design and testing shall comply with requirements of Section 03 30 00.

- B. Design mix to produce normal weight concrete consisting of Portland cement, aggregate, water reducing admixture, air entraining admixture, and water to produce the following properties:
  - 1. Compressive Strength. 4,500 PSI, minimum at 28 days, unless otherwise indicated on the Construction Drawings.
  - 2. Slump Range. 3 to 5 inches for normal concrete.
  - 3. Air Entrainment. 5% to 8%.

### 2.3 Configuration

- A. Follow the details shown on the Construction Drawings for the new work of curbs, islands, ramps, and sidewalks.

## 3.0 EXECUTION

### 3.1 Examination

Contractor shall visit the site prior to submitting the bid for work specified herein and on the Construction Drawings and become familiar with existing site conditions. The Contractor shall evaluate the potential access difficulties and provide all necessary equipment and precautions to comply with the requirements of the Specification. Failure to fully investigate the site conditions shall not relieve the Contractor of the responsibility to adhere to the requirements of this Specification. The Engineer and Owner assume no responsibility for information or opinions concerning site conditions not specifically stated in writing. The site location and specific site features are shown on the Construction Drawings.

### 3.2 Preparation

- A. Proof roll prepared base material surface to check for unstable areas. The paving or concrete work shall begin after any unsuitable areas have been corrected and are ready to receive work. Compaction testing for the base material shall be completed in accordance with Section 31 00 00 – Earthwork and Section 32 22 26 – Asphalt Base Course prior to the placement of the paving. The Construction Drawings show specific details for this work.
- B. Surface Preparation. Remove loose material from compacted base material surface to produce a firm, smooth surface immediately before placing concrete.
- C. Cement Concrete Sidewalks, Islands, and Wheelchair Ramps. Prepare subgrade and construct in strict compliance with the requirements of the Site Specifications, as modified by the applicable requirements of Sections and subsections of 31 00 00 and 03 30 00 of these Specifications.
- D. Conduct operations with minimum interference to public or private accesses and facilities. Maintain access and egress at all times and clean or sweep any roadways daily or as required by the governing authority. At such times as deemed necessary by the Owner, dust control shall be provided with sprinkling systems or equipment provided by the Contractor.
- E. Protect bench marks, property corners, and all other survey monuments from damage or displacement. If a marker needs to be removed it shall be referenced by a licensed land surveyor and replaced, as necessary, by the same.

- F. Provide traffic control as required, in accordance with the U.S. Department of Transportation "Manual of Uniform Traffic Control Devices" and the Massachusetts Highway Department requirements.

### 3.3 Installation / Construction / Demolition

#### A. Form Construction

1. Set forms to required grades and lines, and rigidly brace and secure.
2. Install sufficient quantity of forms to allow continuance of work so that forms remain in place a minimum of 24 hours after concrete placement.
3. Check completed form work for grade and alignment to following tolerances:
  - a. To have forms vary from grade and alignment no more than 1/8-inch in 10.0 feet.
  - b. Vertical face on longitudinal axis shall vary no more than 1/4-inch in 10.0 feet.
4. Clean forms after each use, and coat with form release agent as often as required to ensure separation from concrete without damage.

#### B. Concrete Placement

1. Comply with requirements of Section 03 30 00.
2. Do not place concrete until base material and forms have been checked by the Contractor's QA/QC representative for line and grade. Moisten base material if required to provide uniform dampened condition at time concrete is placed. Concrete shall not be placed around manholes or other structures until they are at the required finish elevation and alignment.
3. Place concrete using methods that prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Consolidate with care to prevent dislocation of dowels, and joint devices.
4. Deposit and spread concrete in continuous operation between transverse joints, to the extent practicable. If interrupted for more than 1/2 hour, place construction joint.
5. Tactile Surface Treatment at Wheelchair Ramps. Cast into new concrete ramps in strict accordance with manufacturer's instructions and recommendations. All tactile contact surfaces shall be free of hydrostatic pressure, paint, membranes, soils, or any other foreign materials that could impede performance.

C. Joint Construction

1. Contraction Joints. If joints are specified, the sidewalk shall be constructed in uniform sections of the length specified on the Construction Drawings. The joints between sections shall be formed either by: steel templates 1/8 inch in thickness, of a length equal to the width of the sidewalk, and with a depth which will penetrate at least two inches below the surface of the sidewalk; with 3/4-inch thick performed expansion joint filler cut to the exact cross section of the sidewalk; or by sawing to a depth of at least 2 inches while the concrete is between 4 and 24 hours old. If steel templates are used, they shall be left in place until the concrete has set sufficiently to hold its shape, but shall be removed while the forms are still in place.
2. Transverse Expansion Joints. Transverse expansion joint in the sidewalk shall have a filler cut to the exact cross section. The joints shall be similar to the type of expansion joint used in the adjacent pavement.
3. Joint Fillers. Extend joint fillers full width and depth of joint, and no less than 1/2 inch or more than 1 inch below the finished surface where joint sealer is indicated. If not joint sealer, place top of joint filler flush with finished concrete surface. Furnish joint fillers in one piece lengths for full width being placed, wherever possible. Where more than one length is required, lace or clip joint filler sections together.

D. Concrete Finishing

1. After striking off and consolidating concrete, smooth surface by screening and floating. Adjust floating to compacted surface and produce uniform texture. After floating, test surface for trueness with a 10.0-foot straight-edge. Distribute concrete as required to remove surface irregularities, and re-float repaired areas to provide continuous smooth finish.
2. Work edges of sidewalks, back top edge of integral curb, and formed joints with an edging tool, and round to 1/2-inch radius. Eliminate tool marks on concrete surface. After completion of floating and troweling when excess moisture or surface sheen has disappeared, complete surface finishing, as follows:
  - a. *Inclined Slab Surfaces.* Provide coarse, non-slip finish by scoring surface with stiff bristled broom perpendicular to line of traffic.
  - b. *Sidewalks.* Broom finish by drawing fine hair broom across surface perpendicular to line of traffic. Repeat operation as necessary to produce a fine line texture.
3. Do not remove forms for 24 hours after concrete has been placed. After form removal, clean ends of joints and point up any minor honeycombed areas. Remove and place areas or sections with major defects, as directed by the Engineer.
4. Protect and cure finished concrete paving using acceptable moist-curing methods, more particularly described in the "water curing" Section of ACI 308-81.

E. Curbings

1. General. This work shall consist of curbing constructed in conjunction with the prepared pavement and/or sidewalk in accordance with the dimensions and details shown on the Construction Drawings and in conformity with these Specifications.
2. All limits of pavement shall be curbed, unless otherwise stated.
3. Finishing. The top of the finished curb shall be true to line. The curb shall follow the contour of the pavement. The curb shall be free of humps and sags.

F. Backfill

1. After the concrete has set sufficiently, the spaces in front and back of the sidewalk shall be refilled to the required elevation with suitable material that shall be compacted until firm and solid, and neatly graded.
2. After backfilling, continue to work in accordance with Section 31 00 00 – and with the Construction Drawings.

G. Cleaning Up and Adjusting

1. Sweep concrete pavement and wash free of stains, discolorations, dirt, and other foreign material just prior to final inspection.
2. Protect concrete from damage until acceptance of work. Exclude traffic from work area for an appropriate period of time after placement. When construction traffic is permitted, maintain clean as possible by removing surface stains and spillage of materials.

END OF SECTION



SECTION 32 17 23  
PAVEMENT MARKINGS

**1.0 GENERAL**

1.1 Description of Work

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

1. Furnishing and application of painted pavement markings, as outlined by State specifications and the Construction Drawings.

1.2 Related Sections and Documents

A. Carefully examine Contract Documents and Construction Drawings for requirements that affect work of this Section.

B. Other specification Sections that directly relate to work of this Section include, but are not limited to:

1. Section 32 12 16 – Asphalt Pavement
2. Section 32 16 005 – Curbs, Sidewalks, Islands, and Ramps
3. Section 03 30 00 – Cast-in-Place Concrete

1.3 Submittals / Project Record Documents

A. Submit Material Safety Data Sheets and complete information of all paints and related compounds/chemicals to be used on the site for the work to be conducted in this Section.

B. Submit all documents verifying proper waste disposal of all paints and related materials generated during this work, as specified in this Section.

C. Submit manufacturer's information on manufactured products and materials.

1.4 Regulatory Requirements

A. Properly handle, transport, and manage all hazardous materials to be used at the site, including the paints and related compounds/chemicals, in accordance with manufacturer's recommendations and State requirements.

B. For any unused materials, the Contractor shall provide documentation showing proper off-site disposal of the waste.

C. Contractor shall maintain access for vehicular and pedestrian traffic as required for site operations and other construction activities. Utilize temporary striping, flagmen, barricades, warning signs, and warning lights as required and any other applicable work as required by the Massachusetts Highway Department and/or local agencies. Do not close or obstruct roadways, sidewalks, entrances/exits, hydrants, or any utilities without permits.

D. Contact DigSafe (888-344-7233) 72 hours prior to commencing any excavation.

1.5 References / Standards

Follow the applicable safety standards and guidelines as established by OSHA and other applicable local, State, and Federal governing agencies.

1.6 Job Conditions

- A. Conditions existing at time of inspection for bidding purposes will be maintained by Owner in so far as practical.
- B. Variations to conditions or discrepancy in actual conditions as they apply to pavement marking work are to be brought to the attention of the Owner prior to the commencement of the work.

1.7 Environmental Requirements

- A. The Contractor shall remove and dispose all waste materials generated during this work, including waste paints and other related compounds/chemicals. All waste products shall be disposed according to all applicable Federal, State, and local governing agencies.
- B. Any waste classified as a hazardous or toxic waste shall be disposed in the appropriate manner to a licensed hazardous waste disposal facility. Verification of proper disposal shall be submitted upon completion of the project.
- C. Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.
- D. Comply with governing regulations pertaining to environmental protection.

1.8 Delivery, Storage, and Handling

As specified herein, the Contractor shall manage, deliver, store, and handle all materials in accordance with manufacturer's requirements and applicable governing agencies.

1.9 Quality Assurance / Quality Control

The appropriate QA/QC measures shall apply throughout the entire work of this project.

**2.0 PRODUCTS**

2.1 Materials

- A. Provide white and yellow traffic paint to conform to the requirements of the State specifications.
- B. The Contractor shall provide all tools, materials, equipment, and supplies necessary to conduct the work fully to meet the requirements of this Section and as detailed on the Construction Drawings.

2.2 Mix Design and Testing

The Contractor shall conduct all mix design and testing for all materials to be used, as specified in the State specifications.

2.3 Configuration

The Contractor shall follow the details shown on the Construction Drawings, unless otherwise stated or shown.

**3.0 EXECUTION**

3.1 Examination

Verify items provided by other Sections of work are properly sized and located. Contractor shall visit the site prior to submitting the bid for work specified herein and on the Construction Drawings and become familiar with existing site conditions. The Contractor shall evaluate the potential access difficulties and provide all necessary equipment and precautions to comply with the requirements of the Specification. Failure to fully investigate the site conditions shall not relieve the Contractor of the responsibility to adhere to the requirements of this Specification. The Engineer and Owner assume no responsibility for information or opinions concerning site conditions not specifically stated in writing. The site location and specific site features are shown on the Construction Drawings.

3.2 Preparation

- A. Conduct operations with minimum interference to public or private accesses and facilities. Maintain access and egress at all times and clean or sweep any roadways daily or as required by the governing authority. At such times as deemed necessary by the Owner, dust control shall be provided with sprinkling systems or equipment provided by the Contractor.
- B. Protect benchmarks, property corners, and all other survey monuments from damage or displacement. If a marker needs to be removed it shall be referenced by a licensed land surveyor from Allen & Major Associates, Inc. and replaced, as necessary, by the same.
- C. Provide traffic control as required, in accordance with the U.S. Department of Transportation "Manual of Uniform Traffic Control Devices" and the Massachusetts Highway Department requirements.
- D. Protect existing landscaping materials, appurtenances, and structures that are not to be demolished. Repair damage caused by site operations at no additional cost to the Owner.

3.3 Installation / Construction / Demolition

- A. Thoroughly obliterate existing painted pavement markings in accordance with the requirements of the State specifications. Painting over pavement markings with asphaltic liquids or paints will not be permitted.
- B. Provide yellow and white traffic stripes and symbols of the dimensions shown on the Construction Drawings. Clean surface and apply paint in strict compliance

with manufacturer's instructions and recommendations, and in accordance with the requirements of the State specifications.

- C. Apply two coats of paint to all pavement striping.
- D. Handicap accessible parking spaces, including spaces designated for vans, shall conform to the requirements of the Americans Disability Act unless otherwise stated.
- E. Conduct the pavement markings as designated for the site and for corresponding off-site properties, as specified.

#### 3.4 Cleaning Up and Adjusting

- A. Sweep concrete pavement and other paved surfaces and wash free of stains, discolorations, dirt, and other foreign material just prior to final inspection.
- B. Protect concrete and pavement from damage until acceptance of work. Exclude traffic from painted surfaces for as appropriate after placement. When construction traffic is permitted, maintain pavement and painted areas as clean as possible by removing surface stains and spillage of materials.

END OF SECTION

SECTION 32 22 26

ASPHALT BASE COURSE

**1.0 GENERAL**

1.1 Description of Work

Gravel Base, Full Depth Asphalt Base, Hot Mix Sand Asphalt Base, and Soil Cement Stabilized Base.

1.2 Related Sections and Documents

- A. Section 02 40 00 – Demolition
- B. Section 31 01 10 – Site Preparation
- C. Section 31 00 00 – Earthwork
- D. Section 32 16 00– Curbs, Sidewalks, Islands, and Ramps
- E. Section 03 30 00 – Cast-in-Place Concrete
- F. Massachusetts Highway Standard Specifications
- G. Construction Drawings

1.3 Submittals / Project Record Documents

The Contractor shall submit to the Owners Representative the following product data.

- A. Material list of items proposed to be provided under this Section.
- B. Manufacturer's specifications, catalog cuts, and other engineering data need to demonstrate compliance with the specified requirements.
- C. Submit complete information on aggregates and cement concrete materials and mixtures, as specified in Section 03 30 00.

1.4 Regulatory Requirements

- A. Conform to applicable local, State, and Federal codes for demolition of structures, safety of adjacent structures, dust control, and runoff control. Obtain required permits and licenses from authorities. Pay associated fees including disposal charges at no additional cost to the Owner.
- B. Notify affected utility companies before starting work and comply with their requirements.
- C. The Contractor shall maintain access for vehicular and pedestrian traffic as required for site operations and other construction activities. Utilize temporary striping, flagmen, barricades, warning signs, and warning lights as required and any other applicable work as required by the Massachusetts Department of Transportation and/or local agencies. Do not close or obstruct roadways, sidewalks, entrances/exits, hydrants, or any utilities without permits.

- D. Contact DigSafe (888-344-7233) 72 hours prior to commencing any excavation.

#### 1.5 References / Standards

- A. Follow the applicable safety standards and guidelines as established by OSHA and other local, State, and Federal governing agencies.
- B. Follow the applicable standards and procedures, using the most updated version, necessary to complete the work fully, including but not limited to the following:
  - 1. ANSI/ASTM D698 Laboratory Compaction Characteristics of Soil using Standard Effort.
  - 2. ANSI/ASTM D1557 Laboratory Compaction Characteristics of Soil using Modified Effort.
  - 3. ASTM D2167 Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
  - 4. ASTM D1556 Density and Unit Weight of Soil in Place by the Sand-Cone Method.
  - 5. ASTM D2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth), Direct Transmission.
  - 6. ASTM D3017 Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
  - 7. ASTM D4318 Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
  - 8. AASHTO T88 Particle Size Analysis of Soils.

#### 1.6 Job Conditions

Conditions existing at time of inspection for bidding purposes will be maintained by Owner in so far as practicable.

#### 1.7 Environmental Requirements

- A. Conform to applicable regulatory procedures when discovering hazardous, special, or contaminated materials.
- B. Comply with governing regulations pertaining to environmental protection.
- C. Acquire all necessary permits, licenses, and/or certificates as required by local, State, and/or Federal agencies prior to the start of the work and thereafter as appropriate, at no additional cost to the Owner.
- D. The Contractor shall remove and dispose all waste materials generated during this work, including waste paints and other related compounds/chemicals. All waste products shall be disposed according to all applicable Federal, State, and local governing agencies.

- E. Any waste classified as a hazardous or toxic waste shall be disposed in the appropriate manner to a licensed hazardous waste disposal facility. Verification of proper disposal shall be submitted upon completion of the project.

1.8 Delivery, Storage, and Handling

- A. Items of salvageable value to Contractor may be removed from the site. Storage or sale of removed items on the site will not be permitted and shall not interfere with any other work specified in the Contract documents.
- B. Explosives shall not be brought to the site or used without written consent of authorities having jurisdiction. Such written consent will not relieve Contractor of total responsibility for injury to persons or for damage to property due to blasting operations. The performance of any required blasting shall comply with governing regulations.
- C. As specified herein, the Contractor shall manage, deliver, store, and handle all materials in accordance with manufacturer's requirements and applicable governing agencies.

1.9 Quality Assurance / Quality Control

The appropriate QA/QC measures shall apply throughout the entire work of this project.

**2.0 PRODUCTS**

2.1 Materials

Submit materials certificate which is signed by the material producer and Contractor to the designated independent testing laboratory certifying that materials comply with, or exceed, the requirements herein.

2.2 Mix Design and Testing

- A. An independent testing laboratory, selected and paid by the contractor, may be retained to perform construction testing of in-place base courses for compliance with requirements for thickness and tolerance. Paving base course tolerances shall be verified (by rod and level readings) on no more than 50-foot centers to  $\pm 0.05$  feet of design elevations that allow for paving thicknesses as shown on the Construction Drawings. The Contractor shall provide instruments and a suitable benchmark.
- B. The following tests may be performed at the Owner's discretion on each type of material used as base course material.
  - 1. Moisture and Density Relationship. ASTM D698 and ASTM D1557
  - 2. Particle Size Analysis of Soils. AASHTO T-88.
  - 3. Plasticity Index. ASTM D4318.
  - 4. Base Material Thickness. Perform one test for each 20,000 square feet of in-place base material area.

5. Base Material Compaction. Perform one test in each lift for each 20,000 square feet of in-place material area.
  6. Test each source of base material for compliance with applicable State specifications.
  7. Field density tests for in-place materials shall be performed according to one of the following standards as part of construction testing requirements.
  8. Sand-Cone Method. ASTM D1557.
  9. Balloon Method. ASTM D2167.
  10. Nuclear Method. ASTM D2922, Direct Transmission.
- C. The independent testing laboratory shall prepare test reports that indicate the test location, elevation data, and test results. The Owner, Engineer, and Contractor shall be provided with copies of the reports within 96 hours of the time the test was performed. In the event that any test performed fails to meet the applicable Specifications, the Owner and Contractor shall be notified immediately by the independent testing laboratory. The Owner reserves the right to employ the independent testing laboratory and to direct any testing that is deemed by them to be necessary. The Contractor shall provide safe and unlimited access to the site for testing activities.

### 2.3 Configuration

The Contractor shall follow the details shown on the Construction Drawings and as specified herein, unless otherwise stated or shown.

## 3.0 EXECUTION

### 3.1 Examination

- A. Verify substrate has been inspected and that gradients and elevations are correct and dry.
- B. The Contractor shall visit the site prior to submitting the bid for work specified herein and on the Construction Drawings and become familiar with existing site conditions. The Contractor shall evaluate the potential access difficulties and provide all necessary equipment and precautions to comply with the requirements of the Specification. Failure to fully investigate the site conditions shall not relieve the Contractor of the responsibility to adhere to the requirements of this Specification. The Engineer and Owner assume no responsibility for information or opinions concerning site conditions not specifically stated in writing. The site location and specific site features are shown on the Construction Drawings.



### 3.2 Preparation

- A. Provide, erect, and maintain temporary barriers and security devices at locations indicated.
- B. Protect existing landscaping materials, appurtenances, and structures that are not to be demolished. Repair damage caused by site operations at no additional cost to the Owner.
- C. Prevent movement or settlement of adjacent structures. Provide bracing and shoring.
- D. Mark location of utilities. Protect and maintain in safe and operable condition the utilities to remain. Prevent interruption of existing utility service occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities as acceptable to governing authorities.
- E. Provide dumpsters and/or rolloff containers for interim placement of demolition debris. Make arrangements for off-site debris removal and disposal. Secure and place containers in a safe manner.
- F. Conduct operations with minimum interference to public or private accesses and facilities. Maintain access and egress at all times and clean or sweep any roadways daily or as required by the governing authority. At such times as deemed necessary by the Owner, dust control shall be provided with sprinkling systems or equipment provided by the Contractor.
- G. Protect benchmarks, property corners, and all other survey monuments from damage or displacement. If a marker needs to be removed it shall be referenced by a licensed land surveyor from Titcomb Associates, Inc. and replaced, as necessary, by the same.
- H. Provide traffic control as required, in accordance with the U.S. Department of Transportation "Manual of Uniform Traffic Control Devices" and the Massachusetts Highway Department.

### 3.3 Installation / Construction / Demolition

- A. Perform base course construction in a manner that will drain surface properly at all times and at the same time prevent runoff from adjacent areas from draining onto base course construction.
- B. Compact base material to no less than 98% of optimum density as determined by ASTM D698 or 95% of optimum density, as determined by ASTM D1557, unless otherwise indicated on the Construction Drawings.
- C. Gravel Base. Construct to thickness indicated on the Construction Drawings.
- D. Apply in lifts or layers not exceeding 8 inches, measured loose.
- E. Compact, regrade, and add additional material as required.

END OF SECTION

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SECTION 32 92 19

SEEDING

**1.0 GENERAL**

1.1 Description of Work

- A. Extent of work: all disturbed areas.
- B. Work of this Section includes, furnishing, placing leveling and compacting of new topsoil, furnishing and application of soil amendments, furnishing and application of fertilizers, and furnishing and spreading seed and mulch.
- C. Topsoil will be stockpiled for reuse in new lawn work. If quantity of stockpiled topsoil is insufficient, provide additional topsoil to complete lawn work.
- D. Maintain seeded areas until acceptance.

1.2 Related Documents

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications sections, apply to the work of this section.

1.3 Submittals / Project Record Documents

- A. Certification of Grass Seed: Submit vendor's certified statement for grass seed mixture required, stating botanical and common name, percentage by weight, and percentages of purity, germination and weed seed for each grass seed species.
- B. Topsoil analysis report: Submit soil analysis for proposed new topsoil. Indicate suitability of topsoil for lawn growth. If not suitable, state recommended quantities for nitrogen, phosphorus and potash; and any limestone, aluminum sulphate or other soil amendments necessary to make topsoil suitable.
- C. Planting Schedule: Submit proposed planting schedule indicating anticipated dates and locations for each type of planting. Seeding shall occur during normal seasons for such work in the location of the project. Do not seed in frozen ground.
- D. Maintenance Instructions: Submit written instructions recommending procedures to be established by Owner for maintenance of lawn work during entire period of a year.

1.4 Requirements, Codes

The following are minimum requirements and shall govern except that all Federal, Local, and/or State Codes and Ordinances shall govern when their requirements are in excess hereof.

1.5 Delivery Storage and Handling

- A. Deliver grass seed in original containers showing analysis of seed mixture, percentage of pure seed, year of production, net weight, date of packaging and

location of packaging. Damaged packages are unacceptable.

- B. Deliver fertilizer in unopened waterproof bags showing weight, guaranteed chemical analysis and name of manufacturer. Store fertilizer so that it will be dry and free flowing when used.
- C. Lime shall be delivered in a dry free flowing condition until used.

#### 1.6 Warranty

Warranty seeding for a period of 9 months after substantial completion, against defects including death and unsatisfactory growth, but excepting defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond the contractor's control.

## 2.0 PRODUCTS

### 2.1 Materials

#### A. Topsoil:

1. Reused Topsoil: As available from site work.
2. Imported Topsoil: Provide topsoil that is fertile, friable, naturally loamy, surface soil free of subsoil, clay lumps, brush, weeds and other litter and free of roots, stumps, stones larger than 1" in any dimension, and other extraneous or toxic matter harmful to plant growth. Obtain topsoil from local sources or from areas having similar soil characteristics to that found at the site of work. Obtain topsoil from naturally well-drained sites where topsoil occurs in depth of not less than 4"; do not obtain from bogs or marshes. Topsoil to have an acidity range (pH) of 5.5 to 7.5 containing a minimum of 4% and a maximum of 25% organic matter.

#### B. Soil Amendments:

1. Lime: Natural limestone containing not less than 85% of total carbonates, ground to such fineness that not less than 90% passes a 10-mesh sieve and not less than 50% passes a 100-mesh sieve.
2. Peat humus: To be FS Q-P-166, Type II composed of mosses (other than sphagnum) or reed-sedge peat (Type IV) of a coarse fibrous texture and with a pH of 6.0 to 7.5, unless otherwise indicated. For acid loving trees and shrubs, provide moss peat with a pH of 3.2 to 4.5, coarse fibrous texture, Type I, Class B (medium divided sphagnum moss peat) or Type IV (reed-sedge moss peat).
3. Fertilizer: Provide complete commercial fertilizer, of neutral character, with some elements derived from organic sources, containing not less than 4% available phosphoric acid, not less than 2% soluble potash, and a percentage of nitrogen required to provide not less than 1.0 lb. of actual nitrogen per 1000 square feet (10-10-10) of lawn area. Provide nitrogen in a form that will be available to the lawn during initial period of growth.

C. Seed:

1. Seed shall be from the same or previous year's crop and shall have not more than 1% weed content.
2. Seed shall be furnished in fully labeled, standard, sealed containers.
3. Refer to construction documents for Wet Water Quality Swale seeding requirements.
4. Percentage and germination of each seed type in the mixture, purity and weed/seed content of the mixture shall be clearly stated on the label.
5. Seed shall be furnished on a pure live seed (PLS) basis. The weight of PLS is computed by the labeled purity percentage multiplied by the labeled germination percentage multiplied by the weight. Seed shall conform to the following:

- a. Level grassed areas (Level to 2.5:1 slopes). The seed mix shall be "Lofts Tri-Plex General" or approved equal applies at a rate of 170lbs/acre. The mix shall be composed of the following.

<u>Kind of Seed</u>	<u>PLS per acre, pounds</u>
Kentucky Bluegrass (Nassau)	83.3
Chewings Fescue (Jamestown II)	28.05
Perennial Ryegrass (Palmer II)	<u>28.05</u>
	139.4

- b. Level grassed areas (Level to 2.5:1 slopes). The hydroseed mix shall be "Hydroseed Pro Mix" or approved equal. The mix shall be composed of the following.

<u>Kind of Seed</u>	<u>Percent</u>	<u>Germ</u>
Cruiser Perennial Rye	44.55%	90%
Boreal Creeping Red Fescue	34.65%	85%
Kentucky Bluegrass	19.80%	85%
Coarse Kinds: None claimed		
Other Ingredients		
0.85% Inert    0.15% Crop	0.00%	Weed

- c. Slopes greater than 2.5:1, consult the Engineer.

6. Landscape Repairs

- a. All lawn areas used for contractor parking and material storage shall have topsoil removed, the subsoil shall be loosened to 12" below finished grade, the topsoil shall be replaced and amended with a complete, slow release fertilizer, proof rolled and seeded with a restoration seed mix consisting of:

Blue Seal Classic (restoration) one point per 300 square feet  
 Kentucky Bluegrass 98/85 36% Creeping Red Fescue 25%  
 Omega III Perennial Ryegrass with endophytes 20%

- b. All lawn areas damaged by pedestrian or vehicular traffic due to the contractor's operations shall be aerated. Aeration shall consist of 9"-10" deep infraction at areas free of tree roots and at areas within tree drip lined shall be aerated 1"-3" with a tow

behind 3 point hitch aerator. If in the opinion of the Engineer, the lawn areas require over-seeding or restoration, the following seed mixture shall be used at a rate to be determined:

Blue Seal Tri-Lux Rye Blend (overseeding) Fiesta II, Omega III  
Perennial Ryegrass 35% Omega III Perennial Ryegrass with  
endophytes 20% Saturn Perennial Ryegrass with endophytes  
25%

- D. Hay Mulch: Mowed and properly cut grass or legume mowings, reasonably free from swamp grass, weeds, twigs, debris or other deleterious material. It shall be free from rot or mold and shall be acceptable to the Engineer.
- E. Jute Matting: Un-dyed, unbleached jute yarn woven into uniform, open, plain weave mesh; furnished in rolled strips 48-inches wide; 78 warp ends per width of cloth; 41 weft ends per yard; weight to average 1.22 to 1.80 lbs per linear yard.

### 3.0 EXECUTION

#### 3.1 Soil Preparation

- A. Limit preparation to areas that will be planted in immediate future.
- B. Protect existing underground improvements from damage.
- C. Loosen sub-grade of lawn areas to a minimum depth of 4". Remove stones over 1 1/2" in any dimension and sticks, roots, rubbish and other extraneous matter.
- D. Clean topsoil of roots, plants, sods, stones, clay lumps and other extraneous matter harmful or toxic to plant growth.
- E. Mix soil amendments and fertilizers with topsoil at rates specified by manufacturer. Delay mixing of fertilizer if planting will not follow placing of topsoil within a few days. Mix soil either prior to spreading or apply soil amendments on surface of spread topsoil and rake thoroughly into top 4" of topsoil before planting. Place limestone evenly at a rate of 50 to 100 lbs per square feet.
- F. Spread topsoil mixture to depth required to meet thickness, grades and elevations shown, after light rolling and natural settlement. Do not spread if material is frozen or if sub-grade is frozen. Grade to eliminate rough spots and low areas where ponding may occur. Maintain smooth, uniform grade.
- G. Assure positive drainage away from structures.
- H. Moisten prepared lawn areas before planting. Water thoroughly and allow surface to dry off before planting. Do not create a muddy soil condition.

#### 3.2 Seeding

- A. Apply seed at a rate of 4 lbs per 1,000 square feet evenly in two intersecting directions. Rake in lightly.
- B. Do not sow immediately following rain, when ground is too dry or during windy periods.
- C. Roll seeded area with roller not exceeding 112 lbs.
- D. Apply water with a fine spray immediately after each area has been sown.

- E. Seeding shall be done between April 15 and June 1, between August 15 and October 15, or as directed or permitted. Seeding shall not be done during windy weather or when the ground is frozen, excessively wet or otherwise non-tillable.

### 3.3 Seed Protection on Slopes

- A. Cover seeded slopes where grade is 3:1 or greater with jute matting. Roll matting down over slopes without stretching or pulling.
- B. Lay matting smoothly on soil surface, burying top end of each section in narrow 6 inch trench. Leave 12 inches overlap from top roll over bottom roll. Leave 4 inches overlap over adjacent section.
- C. Staple outside edges and overlaps at 36-inch intervals.
- D. Lightly dress slopes with topsoil to ensure close contact between matting and soil.
- E. In ditches, unroll matting in direction of flow. Overlap ends of strips 6 inches with up stream section on top.

Maintenance Period  
Until final acceptance.

### 3.4 Maintenance

- A. Maintain surfaces and supply additional topsoil where necessary, including areas affected by erosion.
- B. Water to ensure uniform seed germination and to keep surface of soil damp.
- C. Apply water slowly so that surface of soil will not puddle and crust.
- D. Apply weed killer if weeds start developing during calm weather when air temperature is above 50 degrees F.
- E. Replant damaged grass areas showing root growth failure, deterioration, bare or thin spots and eroded areas.

### 3.5 Restoration

Restore pavement, concrete, grassed areas, planted areas and structures damaged during execution of work of this section.

### 3.6 Acceptance

Seeded areas will be accepted at end of maintenance period when seeded areas are properly established and otherwise acceptable. Maintenance period 60 days.

END OF SECTION

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**SECTION 33 41 00**  
**STORM SEWER SYSTEM**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

Drawing and general provisions of Contract, including general conditions and Division-1 Specification sections, apply to work of this section.

- A. Section 31 23 00 – Earthwork
- B. Local governing authority and code requirements

1.02 SUMMARY

- A. Extent of storm sewage system work is indicated on drawings and schedules, and by requirements of this section. Included is the construction of Storm Sewer Piping, and all appurtenances and adapters for drainage structures at the locations and to the lines and grades shown on the Contract Drawings ordered by the Engineer and as specified herein.

Limit of Stormwater piping covered under these specifications shall be offsite as well as on-site and within five feet from building foundations.

- B. Refer to Division-31 Section, "Earthwork" for excavation and backfill required for storm sewage system; not work of this section.
- C. Refer to Contract Drawings for Site Contractor's scope of work for building storm drainage and storm water roof leader construction.

1.03 SUBMITTALS:

- A. Product Data: Submit manufacturer's technical product data and installation instructions for storm sewage system materials and products for approval by Engineer prior to construction.
- B. Manufacturer's Certificate: Certify that products meet or exceed specified local requirements.

1.04 QUALITY ASSURANCE

The manufacturing plant for precast materials, the quality of materials, the process of manufacture and the finished precast unit or pipe shall be subject to inspection and approval by the Engineer.

1.05 DEFINITIONS:

For the work under this section, the following definitions shall apply:

- A. "Install" as called for on the Contract Drawings shall mean the work required to construct a new manhole or catch basin in conformance with the Contract Drawings.
- B. "Provide" as called for on the Contract Drawings shall mean the work required to remove an existing catch basin or manhole and its appurtenances and construct a new catch basin or manhole in conformance with the Contract Drawings.
- C. "Reconstruct" as called for on the Contract Drawings shall mean that work required on existing manholes or catch basins in order to make required connections and/or disconnections of pipes being installed and/or abandoned under other sections of work.
- D. "Convert" shall mean the work required in changing an existing unit to a unit of another type.
- E. "Reset" shall mean the minor adjustment of frames, grates, and covers of existing units to the proposed grade not involving major reconstruction of the unit. (Examples of resetting are: adding several courses of brick/block to bring a frame to required grade; removing some masonry courses for lowering a frame without reconstruction below the required elevation of the bottom of the frame; providing that the frame will be properly seated).

1.06 REQUIREMENTS

- A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of storm sewage system's products of types, materials, and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.
- B. Plumbing Code Compliance: Comply with applicable portions of Town, and National Standard Plumbing Code pertaining to selection and installation of storm sewage system's materials and products.

1.07 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations of pipe runs, connections, catch basins, cleanouts, and invert elevations.
- B. Identify and describe unexpected variations to subsoil conditions and location of uncharted utilities.

1.08 PROJECT CONDITIONS

Coordinate work with termination of storm sewer connection outside building including connection to municipal storm sewer system with Town Public Works.

PART 2 PRODUCTS

2.01 PIPES AND FITTINGS MANHOLES BASINS AND ACCESSORIES

General: Provide pipes of one of the following materials, of size weight/class indicated. Provide pipe fittings and accessories of same material and weight/class as pipes as applicable with joining method as indicated.

- A. Pipe - All pipe shall be of sizes and classes as shown on the Contract Drawings.
- B. High Density Polyethylene Pipe (HDPE) Smooth interior (Solid or Perforated): Only permitted when specifically indicated on Construction Drawings and shall conform with AASHTO Designation M 294 Type S. The pipe shall have annular corrugations. The self-locking integral bell portion shall be permanently affixed to the pipe and shall be polyethylene. The locking mechanism shall engage at 4 equally spaced locations around the pipe circumference. It shall be manufactured from high density polyethylene (HDPE) meeting the requirements of ASTM D3350 cell class 324420C; or the requirements of ASTM D1248: Type III, Category 4 Grade P33, Class C. Acceptable manufacturers: Advanced Drainage Systems, Inc. "ADS N-12", HANCOR, INC. "Hi-Q", or approved equal. Pipe joints shall be standard soil tight joints.
- C. Polyvinyl Chloride Pipe- (PVC): Shall be where indicated on the Contract Drawings and conform to ASTM D3034 for SDR 35. Hydrostatic design stress rating shall be 730 psi based on 1,460-psi material per ASTM D2837. Pipe lengths shall not exceed 20 feet, be bell and spigot type with integral rubber ring gasket conforming to ASTM C361. Markings for pipe and fittings shall indicate the manufacturer's name, nominal size, material designation, type, and ASTM designation in accordance with ASTM D3034. Fittings shall be molded of same material as pipe. Couplings and elbows for schedule 40 pipe shall conform to ASTM D2466 or D2467. Pipe for foundation drains and underdrains shall conform to ASTM D2729.
- D. Flexible Service Tees and Flexible Watertight Connections shall consist of neoprene rubber by Fernco or approved equal.
- E. Grout Bonding Agent where called for shall be Sikadur Hi-Mod by Sika Chemical Corporation or Floroks Plas-Tex by the Charger Corporation or equal.
- F. Grout - where non-shrink grout is called for, it shall conform to ASTM C827 allowing 3 percent expansion and have a compressive strength of 4,500 psi or shall consist of one part cement and one part sand with sufficient water to provide suitable workability. The grout shall contain "Embeco", by Master Builders Co., "Florok" by the Charger Corp., or approved equal.
- G. Bedding Material shall be of the type as indicated on the Contract Drawings and conform to requirements of Section 31 2000 for foundation stone, borrow and backfill requirements as specified.

2.02 MISCELLANEOUS

- A. Polyvinyl chloride (PVC) Liner shall be Non-reinforced 30 mil PVC liner and conform to the minimum requirements of these specifications. Seams shall be solvent welded. Pipe "boots" shall be used to seal pipe penetrations through the liner. Boots can either be prefabricated by the liner fabricator or field fabricated by the contractor. The boot is then solvent cemented, heat welded or taped to the liner. A pipe clamp is normally

used to seal the boot around the pipe. Seaming and sealing pipe boots at low temperatures (32° F minimum) requires preheating of the material.

1. A protective layer of either Filter Fabric or fine grain sand WILL be laid between the PVC liner and the prepared subgrade as a protective layer against rips or tears in the liner from the subgrade.
- B. Filter Fabric shall be spunbound, non-woven filaments of polypropylene or polyethylene and conform to the minimum requirements of these specifications. Materials incidental to and necessary for the installation of Filter Fabric, such as, but not limited to sewing thread, staples, pins, etc., shall conform to the requirements of the manufacturer of the Filter Fabric.

Weight	6.0 oz./yd <sup>2</sup>	ASTM D1910
Grab Strength	110	ASTM D4632
Grab Elongation	40-60%	ASTM D4553-91
Trapezoidal Tear	45	ASTM D4553-91
Mullen Burst	300	ASTM 3786
Equivalent Opening	70 min. U.S. Std.	Corps of Engs
Apparent Opening	60-120	ASTM D4751
Permittivity	120 gal/min/ft <sup>2</sup>	ASTM 4491

- C. Cleanouts shall be 6" ductile iron (ANSI A21.51) or Polyvinyl chloride pipe (ASTM D3034) risers, with sealed plug at grade for cleaning. Frame and cover to be cast iron per contract drawings.

Size of risers shall be 24" diameter as shown on contract documents.

PART 3 EXECUTION

3.01 INSTALLATION OF PIPE AND FITTINGS

- A. The Contractor shall install piping and appurtenances in accordance with governing authorities having jurisdiction except where more stringent requirements are indicated.

1. High Density Polyethylene Pipe: Install in accordance with manufacturer's installation recommendations and guidelines.
2. Cleaning Piping: Clear interior of piping of dirt and other superfluous material as work progresses. Maintain swab or drag in line and pull past each joint as it is completed.

In large accessible piping, brushes and brooms may be used for cleaning.

Place plugs in ends of uncompleted conduit at end of day or whenever work stops.

Flush lines between manholes if required to remove collected debris.

3. Joint Adapters: Make joints between different types of pipe with standard manufactured adapters and fittings intended for that purpose.

4. Pipe laying - All sewers shall be laid true to line and grade with bells or grooves upgrade. The sections of the pipe shall be so laid and fitted together that, when complete, the sewer will have a smooth and uniform invert. The pipe shall be kept thoroughly clean so that jointing compounds will adhere. Each pipe shall be inspected for defects before being lowered into the trench.

All excavations, trenching supports and backfilling shall conform to applicable sections of Division 31.

The Contractor shall provide all necessary pumps, dams, drains, ditches, flumes, well points and other means for excluding and removing water from trenches and other parts of the work. Water shall not be allowed to rise around joints until they have set.

Remove existing piping and drainage structures so indicated on the Contract Drawings to be removed.

Precautions shall be taken during freezing weather to protect the masonry from damage by frost.

If, pipe laying cannot start at the downgrade end and progress upgrade, due to restrictions imposed by land acquisition and/or other construction activities, then construction may be done in sections as approved by the Engineer.

Make connections to existing piping and underground structures, so that finished work will conform as nearly as practicable to requirements specified for new work.

Use commercially manufactured wyes for branch connections. Field cutting into piping will be permitted unless indicated or directed by the Engineer.

The Contractor shall furnish materials, tools and men to assist the Owner's Representative and to handle survey equipment, levels, grade poles, plumb poles, plumb bobs, straight edges, laser equipment, and other equipment used for transferring grades, setting strings on profiles or grade slats or aligning pipe. While inspectors may at times check alignment, the Contractor's crew shall not be dependent upon the Owner's Representative for the performance of such work. All labor, tools and facilities needed to set or transfer line and grade, to measure pipe beds, pipe grade and line; etc. shall be furnished by the Contractor.

Not more than 100 feet of trench shall be opened in advance of pipe laying unless permitted by the Engineer. The excavation of trenches shall be fully completed a sufficient distance in advance of laying of the sewer, and the exposed end of all pipes shall be fully protected with a board or other approved stopper to prevent earth or other substances from entering the pipe.

Any storm sewer pipe delivered to the job site in a damaged condition shall be removed from the job site immediately. Except for RCP, other sewer pipe bruised or damaged after delivery to the job site may be repaired and used as specified when permitted by the Engineer.

Any fitting showing a crack and any fitting or pipe which has received a severe blow that may have caused an incipient fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the site.

In any pipe except as specified otherwise, showing a distinct crack and in which it is believed there is no incipient fracture beyond the limits of the visible crack, the cracked portion, if so approved, may be cut off by and at the expense of the Contractor before the pipe is laid so that the pipe used may be perfectly sound. The cut shall be made in the sound barrel at a point at least 12 inches from the visible limits of the crack.

Except as otherwise approved, all cutting of sewer pipe shall be done with an approved power-driven cutter or pipe-cutter. Hammer and chisel shall not be used to cut pipe. All cut ends shall be examined for possible cracks caused by cutting. The use of an oxyacetylene torch for flame cutting shall be done in a neat and workmanlike manner without damage to the pipe or its lining and so as to leave a smooth end at right angles to the pipe.

5. Pipe Jointing - Approved joint materials shall be handled and installed in accordance with the recommendation of the manufacturer. All joints shall be wiped smooth inside the pipe.
  - a. PVC shall be installed in accordance with the manufacturer's recommendations. Particular care should be taken to keep fine materials from interfering with proper joint assembly. Matching surfaces of a joint shall be wiped clean. The surfaces shall then be coated with a lubricating material prescribed by the manufacturer to overcome the frictional resistance encountered when shoving the pipe home. Pipe that is not marked with a depth mark shall be marked before assembly to assure that the spigot end is inserted to the full depth of the joint.
6. Caps And/Or Plugs - All pipes (e.g. manhole pipe stubs, service laterals, service chimneys, sewers to be abandoned, etc.) shall be either plugged with manufactured units or masonry bulkheads as specified hereinafter. All plugs and masonry bulkheads must be installed so that any future removal will not damage the bell of the pipe.

Close open ends of abandoned underground utilities which are indicated to remain in place. Provide sufficiently strong closures to withstand hydrostatic or earth pressure which may result after ends of abandoned utilities have been closed.

Close open ends of concrete masonry utilities with not less than 8" thick masonry bulkheads.

Close open ends of piping with threaded metal caps, plastic plugs, or other acceptable methods suitable for size and type of material being closed. Wood plugs are not acceptable.

7. Pipe Bedding: Where foundation stone is used for a foundation or to replace unsuitable materials, it shall be deposited in layers not over 8 inches thick and each layer shall be thoroughly compacted before the addition of other layers.

The Engineer will specify the foundation stone gradation to be utilized based on field conditions. The surface shall be carefully brought to grade and compacted as shown on the Contract Drawings and as directed by the Engineer.

Where foundation stone is used for pipe bedding it shall be placed and compacted in conformance with the respective item for the pipe being bedded or as directed by the Engineer.

### 3.02 MISCELLANEOUS

- A. Area Drains: Installation shall be accordance with recommendations by the pipe manufacturer and as herein specified.

When the bottom of the trench is unstable or in rock, the trench shall be excavated 6" deeper and an additional 6" layer of foundation stone, crushed stone, gravel fill or aggregate similar to that used to fill the trench shall be placed and compacted in the trench which ever is indicated on the Contract Drawings.

The aggregate for filling the trench shall be placed to a depth of 3" and tamped true to grade. The pipe shall be placed and firmly bedded on the aggregate. This aggregate shall be placed whether the pipe is encased with Filter Fabric or not.

When the pipe used has a bell, the pipe shall be installed with the bell end upgrade with the spigot end entered fully into the adjacent bell.

When plastic or polyethylene pipe is used, the pipe shall be carefully butted together and held by bands or other approved means so as to prevent any displacement of the joint.

After the pipe has been installed as described above, the aggregate shall be placed carefully around and over the pipe to a height of 12" above the top of the pipe or as indicated in Foundation Drainage Specification or on Contract Drawings for Foundation or under drains. The remainder of the trench shall be filled with aggregate and tamped in layers as shown on the plans. The entire length of each drainpipe shall be wrapped with the fabric and the seams lapped and welded or bonded. Where the seams of the filter fabric are not welded or bonded, they shall be lapped to a minimum width equal to the diameter of the pipe for 6" pipe and larger and a minimum of 6" for smaller pipe.

In all cases where subbase material or gravel is to be placed over the underdrain or foundation drain a layer of at least 6" of subbase material or gravel shall be placed over the underdrain immediately after its completion.

Where shown on the plans or directed by the Engineer, the Contractor shall connect, foundation or under drains or outlets to existing or proposed drainage systems or structures, and provide cleanout riser pipes and caps.

This work shall be performed in a workmanlike manner satisfactory to the Engineer by installation of tees or wye branches or by providing a hole in the mainline foundation drain.

Where the upgrade end of the, foundation drain does not enter a structure, it shall be capped or plugged as directed.

- B. Inspection: Upon completion of installation and backfilling, all pipe and structures shall be inspected by the Engineer. This inspection shall be undertaken as the work progresses, and shall be a pre-requisite for acceptance of all work.

An inspection of the interior of the completed pipe by direct visual inspection shall be made for pipe installed. Any facilities, materials, lights, equipment or labor necessary for such inspection shall be provided by the Contractor.

Any foreign material found in the interior of the new or existing pipe, catch basins, Manholes, or outlet structures including any dirt, debris or other objects shall be removed by the Contractor. Visible defects such as broken pipe sections, improperly installed gaskets, projecting connections, cracks, visible leaks, irregular inverts or other defects shall be noted, corrected and the pipe reinspected.

**END OF SECTION**