



CITY OF LEOMINSTER, MASSACHUSETTS

CONTRACT DOCUMENTS
FOR

Twin Cities Rail Trail Phase III
(PROJECT)

January 21, 2025 @ 11:00 AM
Bid Opening Date

City of Leominster, Massachusetts

Office of the Purchasing Agent

Leominster City Hall

25 West Street

Leominster, MA 01453

CITY OF LEOMINSTER CONTRACT No. (number assigned upon bid award)

TABLE OF CONTENTS

Section Number

Bidding and Contract Requirements

Invitation to Bid	00020
Instructions to Bidders	00100
Form of General Bid	00300
Agreement	00500
Construction Performance Bond	00610
Construction Payment Bond	00620
Supplemental Conditions Excerpts	00800
from Applicable State Law	00850
Specifications - Part A and B	00900

Attachment A – Wage Rates

Attachment B - Unit Pricing

Attachment C - Bid Drawings - is a separate download from website.

SECTION 00020

INVITATION FOR BIDS

Sealed bids for performing the following work will be received at the **Office of the Purchasing Agent, Leominster City Hall, 25 West Street, Leominster, MA 01453** until the time specified below at which time the bids will be publicly opened and read.

Specifications and bid forms may be obtained at the Office of the Purchasing Agent, Monday through Friday between 8:30 a.m. and 4:00 p.m.

Bids will be opened in the Office of the Purchasing Agent on **January 21, 2025, at 11:00 A.M.** Each Bid must be accompanied by a bid security consisting of a **BID BOND**, or **CERTIFIED CHECK** issued by a responsible bank or trust company in the amount of **5%** of the bid price.

There is no pre-bid conference. This is open and public land and can be viewed at any time. If there are questions, please direct them to The Office of the Purchasing Agent. See 100-3 # 8 for contact information.

A Performance Bond in an amount equal to **fifty hundred (50%) percent** of the total amount of the contract price with a surety company qualified to do business in the Commonwealth of Massachusetts will be required for the faithful performance of the contract.

NOTE: Bidders MUST use the bond forms contained in this document in Sections 610 and 620.

All bids for this project are subject to applicable public bidding laws of Massachusetts, including, but not limited to G.L. c.30, §39M.

Attention is directed to the minimum wage rates to be paid as determined by the Commissioner of Labor and Workforce Development and the weekly payroll record submittal requirements under the provisions of Massachusetts General Laws, Chapter 149, Section 26 through 27D inclusive.

Selection of the contractor will be based upon bidder qualifications, including evidence of past performance in similar projects, and bid price. The contract will be awarded to the bidder deemed by the awarding authority to be the lowest responsible and eligible bidder.

The bidder agrees that its bid shall be good and may not be withdrawn for a period of 30 days, Saturdays, Sundays, and legal holidays excluded, after the opening of the bids.

The City reserves the right to waive any informalities, to accept or reject, in whole or in part any or all bids, or take whatever other action may be deemed to be in the best interest of the City.

City of Leominster, MA

By: Gregory C. Chapdelaine, Purchasing Agent

SECTION 00100

INSTRUCTIONS TO BIDDERS

1. Receipt and Opening of Bids

The City of Leominster, Massachusetts, herein called the Owner, acting by and through its Purchasing Agent, will receive sealed Bids for the project known as Twin Cities Rail Trail Phase III.

Bids must be delivered to / mailed to:

**Office of the Purchasing Agent
Leominster City Hall
25 West Street
Leominster, MA 01453**

Envelope must be endorsed: **Bid for Twin Cities Rail Trail Phase III**

Bids will be received at the Office of the Purchasing Agent until **11:00 A.M.** prevailing time, on **January 21, 2025**, at which time and place said bids will be publicly opened and read aloud.

Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified will not be considered. The bidder agrees that its bid shall be good and may not be withdrawn for a period of 30 days, Saturdays, Sundays, and legal holidays excluded, after the opening of bids.

2. Location and Work to be Done

The Work consists of all labor, equipment, materials, etc., and all work incidental thereto as customarily required to fully complete the project, in accordance with the Specifications and conceptual plans attached hereto.

Additional drawings showing details in accordance with which the Work is to be done may be furnished by addendum from time to time during the bidding period by the Owner or its Architect/Engineer and shall then become a part of the Contract Documents.

The Contractor shall furnish all labor, services, materials, equipment, plant, machinery, apparatus, appliances, tools, supplies, and all other things necessary to do all work required for the completion of each item of the Work and as herein specified.

The Work to be done and paid for under any item shall not be limited to the exact extent mentioned or described but shall include all incidental work necessary or customarily done for the completion of that item.

3. Preparation of Bid

Each bid must be submitted on the prescribed form. All blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his address, and endorsed with the name of the project as specified in Receipt and Opening of Bids, above. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified in Receipt and Opening of Bids, above.

4. Bid Opening Procedure

The following list of requirements shall apply to each filed bid. Bids not meeting all the requirements for timeliness and security will be rejected; bids not meeting signature and addenda requirements will be rejected prior to checking of bid amounts.

Bids shall be filed at the place and before the time specified in Receipt and Opening of Bids, above.

Properly executed bid security shall be included with the envelope containing the bid.

Bid signatures will be checked.

All addenda will be sent via e-mail and/or U.S. Mail to all prospective bidders. All bidders shall include with their bids the written acknowledgment form provided in Section 00300, FORM OF GENERAL BID.

The total dollar amount of each bid will be read, and the three apparent lowest bids will be selected for further consideration. These three apparent low bids will be read aloud for the benefit of the other bidders and the bid opening procedure will be closed. All those present at the bid opening may examine all bids after the bid opening and after the reading of the three apparent low bids.

5. Modification

Any bidder may modify his bid by written communication at any time prior to the scheduled closing time for receipt of bids. Any telegraphic communication must be received by the Owner prior to the closing time, and provided further, the Owner must be satisfied that a written confirmation of the telegraphic modification over the signature of the bidder was mailed prior to the closing time. If written confirmation is not received within two days from the closing time, no consideration will be given to telegraphic communication.

The communication shall not reveal the bid price but shall provide the addition or subtraction or other modification so that the final prices or terms will not be known by the Owner until the sealed bid is opened.

6. Ability and Experience of Bidder

No award will be made to any bidder who cannot satisfy the Owner that he has sufficient ability and experience in this class of work and sufficient capital and plant to enable him to prosecute and complete the work successfully within the stated time for completion. The Owner's decision or judgment on these matters will be final, conclusive, and binding.

The Owner may make such investigations as it deems necessary, and the bidder shall furnish to the Owner, under oath if so required, all such information and data for this purpose as the Owner may request.

7. Conditions of Work

Each bidder must familiarize himself fully with the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract. Insofar as possible the Contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with the work of any other Contractor.

8. Addenda and Interpretations

No interpretation of the meaning of the plans, specifications or other prebid documents will be made to any bidder orally. All information given to bidders other than by means of the plans, specifications, or by addenda, as described below, is given informally, and shall not be used as the basis of a claim against the Owner.

Every request for such interpretation must be submitted in writing, and to be given consideration must be received no later than **three (3) business days** prior to the date fixed for the submission of bids. Bid questions can be submitted to the address listed above for submission of bids, or by e-mail to either:

Greg Chapdelaine, Purchasing Agent, gchapdelaine@leominster-ma.gov or 978-962-3538.

Meredith Tarr, Assistant Purchasing Agent mtarr@leominster-ma.gov or 978-962-3537.

Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, when issued, will be emailed to all prospective bidders (at the respective email address furnished by them for such purposes). Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

9. Security for Faithful Performance

Simultaneously with his delivery of the executed Contract, the Contractor shall furnish a surety bond or bonds as security for faithful performance of this contract and for the payment of all persons performing labor and materials under this contract. The surety on such bond or

bonds shall be a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Owner. The bonds shall remain in force for one year after final acceptance of the work by the Owner, unless the Owner, in writing, releases the Contractor from the obligation sooner.

NOTE: Bidders MUST use the bond forms contained in this document in Sections 610 and 620.

10. Power of Attorney

Attorneys-in-fact who sign Contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

11. Laws and Regulations

The bidder's attention is directed to the fact that all applicable State laws, municipal ordinances or bylaws, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the Contract the same as though written out in full.

12. Liquidated Damages for Failure to Enter into Contract

The successful bidder, upon his failure or refusal to execute and deliver the Contract and bonds required within 10 days after presentation thereof by the Owner, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his/her bid, but the amount forfeited shall not exceed the difference between his/her bid price and the bid price of the next lowest responsible and eligible bidder. In case of death, disability, bona fide clerical or mechanical error of a substantial nature, or other similar unforeseen circumstances affecting the bidder, his/her bid deposit will be returned.

13. Obligation of Bidder

At the time of the opening of bids, each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the Contract Documents (including all addenda). The failure or omission of any bidder to examine any form, instrument, or document shall in no way relieve any bidder from any obligation in respect of his bid.

14. Information Not Guaranteed

All information given in the Contract Documents relating to subsurface and other conditions, natural phenomena, existing pipes, and other structures is from the best sources at present available to the Owner. All such information is furnished only for the information and convenience of bidders and is not guaranteed.

It is agreed and understood that the Owner does not warrant or guarantee that the subsurface or other conditions, natural phenomena, existing pipes, or other structures encountered during construction will be the same as those indicated in the Contract Documents. It is further agreed and understood that no bidder or Contractor shall use or be entitled to use any of the information made available to him or obtained in any examination made by him in any manner as a basis of or ground for any claim or demand against the Owner or the Architect/Engineer, arising from or by reason of any variance which may exist between the information made available and the actual subsurface or other structures actually encountered

during the construction work, except as may otherwise be expressly provided for in the Contract Documents.

15. Bid Security

Each bid and sub-bid must be accompanied by bid security in the form of a certified check, a bid bond, or a treasurer's or cashier's check, payable to the Owner, in the amount of **five (5%) percent of the value of the bid**. Such security of general bidders will be returned to all except the three lowest responsible and eligible bidders within five days, Saturdays, Sundays, and legal holidays excluded, after the opening of bids, and the remaining securities will be returned promptly after the Owner and the accepted bidder have executed the Contract, or if no notice of intent to award has been presented to the selected contractor within 30 days, Saturdays, Sundays and holidays excluded, after the date of the opening of bids, upon demand of the bidder at any time thereafter.

16. Right to Reject Bid

The Owner reserves the right to waive any informalities in bids and to reject any and all bids, should the Owner deem it to be in the public interest to do so.

The Owner may also reject bids which in its sole judgment are either incomplete, conditional, obscure, or not responsive or which contain additions not called for, erasures not properly initialed, alterations, or similar irregularities.

17. Time for Completion

The successful general bidder must agree to commence work within ten (10) days of the date of the Notice to Proceed and to fully complete the project within the time limit stated in Section 00300, FORM OF GENERAL BID.

18. Comparison of Bids

Bids will be compared on the basis of prices set forth in the bid forms. In the event that there is a discrepancy between the lump sum or unit prices written in words and figures, the prices written in words will govern.

19. Award of Contract

The Contract will be awarded to "the lowest responsible and eligible bidder" pursuant to Massachusetts General Laws Chapter 30, Section 39M, as amended. Such a bidder shall possess the skill, ability, and integrity necessary for the faithful performance of the work, shall be able to furnish labor that can work in harmony with all other elements of labor employed, or to be employed, in the work, and shall otherwise comply with all applicable provisions of law. The Contract award shall be subject to availability of an appropriation for funding.

20. Statutes Regulating Competitive Bidding

Any bid which does not comply with the provisions of Massachusetts General Laws Chapter 30, Section 39M, as amended, need not be accepted and the Owner may reject every such bid.

21. Wage Rates

Prevailing Wage Rates as determined by the Commissioner of Department of Labor and Workforce Development under the provision of the Massachusetts General Laws, Chapter 149, Section 26 to 27G, as amended, apply to this project. It is the responsibility of the bidder, before bid opening, to request any additional information on Prevailing Wage Rates for those tradespeople who may be employed for the proposed work under this contract.

22. Contractor Records

The Contractor shall comply with the provisions of Massachusetts General Laws, Chapter 30, Section 39R concerning Contractor records.

23. INSURANCE

The Contractor shall carry and continuously maintain until completion of the Contract, insurance as specified in the **Agreement (Section 00500)** and in such form as shall protect him performing work covered by this Contract, and the City of Leominster and its employees, agents, and officials, from all claims and liability for damages for bodily injury, including accidental death, and for property damage, which may arise from operations under this Contract. **The City of Leominster shall be named as an Additional Insured for Premises & Operations and Products & Completed Operations Liability.** The Contractor covenants and agrees to hold the City and its employees, agents, and officials harmless from loss or damage due to claims for bodily injury or death and/or property damage arising from, or in connection with, operations and completed operations under this Contract.

25. PROJECT MANAGER

The Owner may utilize the services of a project manager, whose duties shall be as set forth in an Agreement for Project Manager Services.

26. This section is intentionally blank.

SECTION 00300

FORM OF GENERAL BID

Bid of _____ (hereinafter called "Bidder")*

a corporation, organized and existing under the laws of the state of _____

a partnership

a joint venture

an individual doing business as _____

To the City of Leominster, Massachusetts (hereinafter called "Owner").

Gentlemen:

A)The undersigned Bidder, in compliance with your invitation for bids for the project known as **Twin Cities Rail Trail Phase III**, having examined the plans and specifications and related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the project in accordance with the contract documents and the plans and specifications within the time set forth below, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the contract documents, of which this bid is a part.

The Bidder hereby agrees to commence work on or before the date to be specified in written "Notice to Proceed" of the Owner, and to fully complete the project by or before **June 30, 2026**. Bidder agrees to begin work **Spring of 2025**, and once work commences to work continually until completion of project. The Bidder further agrees to pay liquidated damages the sum of **zero dollars \$0** Dollars for each consecutive calendar day thereafter that the work is not complete as provided in the contract.

*Specify corporation, partnership or individual as applicable.

B) Bidder acknowledges receipt of, and this bid includes the following addenda:

No. _____ Dated: _____

No. _____ Dated: _____

No. _____ Dated: _____

No. _____ Dated: _____

C) The Bidder agrees to perform the bid work described in the specifications and shown on the plans for the following contract price: \$ _____ *

Bid Price written in words (*Unit prices to be submitted on Bid Form in Project Manual)

In a situation where a numerical bid price does not match a bid price written in words, the bid price written in words will prevail.

Date: _____

By: _____
(Signature)

(Printed Name & Title)

(Bidder/Contractor Name)

(Business Address)

(City and State)

(Telephone Number)

(email address)

The above unit prices shall include all labor, materials, equipment, mobilization, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.

The Bidder understands that all bids for this project are subject to the applicable bidding laws of the Commonwealth of Massachusetts, including General Laws Chapter 149 and Chapter 30, Section 39M, as amended.

The Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of thirty (30) days, Saturdays, Sundays, and legal holidays excluded, after the opening of bids.

Within ten (10) days of receipt of the written notice of acceptance of this bid, the Bidder will execute the formal Agreement set forth in Section 00500 CONTRACT.

Bid security is attached in the sum of **five percent (5%) of the total bid** in accordance with the conditions of Section 00100 INSTRUCTIONS TO BIDDERS. The bid security may become the property of the Owner in the event the contract and bond are not executed within the time set forth above.

The selected Contractor shall furnish a Payment Bond in an amount at least equal to **fifty percent (50%) of the contract price** in accordance with, Section 00620 PAYMENT BOND, and as stipulated in the contract.

NOTE: bidders MUST use the bond forms contained in this document in Sections 610 and 620.

The undersigned offers the following information as evidence of his qualifications to perform the work as bid upon according to all the requirements of the plans and specifications.

1. Have been in business under present name for ____ years.
2. The names and addresses of all persons interested in the bid (if made by a partnership or corporation) as principals, are as follows:

(attach supplementary list if necessary)

This page is intentionally left blank

3. The bidder is requested to state below what work of a similar character to that included in the proposed contract he has done and give references that will enable the Owner to judge his experience, skill and business standing (add supplementary page if necessary).

<u>Completion Date</u>	<u>Project Name</u>	<u>Contract Amount</u>	<u>Design Engineer</u>	<u>Reference Name</u>	<u>Telephone No.</u>
----------------------------	-------------------------	----------------------------	----------------------------	---------------------------	--------------------------

a. _____

b. _____

c. _____

d. _____

e. _____

f. _____

Bank reference:

(Bank name)

(Bank address)

(Bank representative contact name)

(Contact email address & telephone number)

Pursuant to M.G.L. c.62C, §49A, I certify hereby in writing, under penalties of perjury, that the within named Bidder/Contractor has complied with all laws of the commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting of child support.

The undersigned Bidder hereby certifies under penalties of perjury, as follows: (1) that he/she is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (2) 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 (3) that all employees to be employed in the work subject to this bid 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.

The undersigned certifies under penalties of perjury that this bid is in all respects bona fide, fair, and made without collusion or fraud with any other person. As used in this paragraph the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. 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 M.G.L. c.29, §29F, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

The undersigned bidder hereby certifies, under pains and penalties of perjury, that the foregoing bid is based upon the payment to laborers to be employed on the project of wages in an amount no less than the applicable prevailing wage rates established for the project by the Massachusetts Department of Labor and Workforce Development. The undersigned bidder agrees to indemnify the awarding authority for, from and against any loss, expense, damages, actions or claims, including any expense incurred in connection with any delay or stoppage of the project work arising out of or as a result of (1) the failure of the said bid to be based upon the payment of the said applicable prevailing wage rates or (2) the failure of the bidder, if selected as the contractor, to pay laborers employed on the project the said applicable prevailing wage rates.

Date: _____

By: _____
(Signature)

(Business Address)

(Type Name of Bidder)

(City and State)

(Title)

(Telephone Number)

SECTION 00500

AGREEMENT

THIS AGREEMENT made this date day of insert month in the year 2024 , between insert contractor name , with a usual place of business at insert business address , hereinafter called the CONTRACTOR, and the City of Leominster, acting by its Mayor, with a usual place of business at Leominster City Hall, 25 West Street, Leominster, MA 01453, hereinafter called the OWNER.

The CONTRACTOR and the OWNER, for the consideration hereinafter named, agree as follows:

1. Scope of Work

The Contractor shall furnish all labor, materials, equipment, and insurance to perform all work required for the project known as Twin Cities Rail Trail Phase III , in strict accordance with the Contract Documents and all related Drawings and Specifications. The said Documents, Specifications, Drawings, and any GENERAL SUPPLEMENTARY CONDITIONS are incorporated herein by reference and are made a part of this Agreement.

2. Contract Price

The Owner shall pay the Contractor for the performance of this Agreement, subject to additions and deductions provided herein, in current funds, the sum of \$ insert contract price upon bid award

3. Commencement and Completion of Work and Liquidated Damages

It is agreed that time is of the essence of this Agreement. The Contractor shall commence and prosecute the work under this Agreement upon execution hereof and shall complete the work on or before .June 30, 2026.

- A. Definition of Term: The Term "Substantial completion" shall mean the date certified by the Owner when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner may occupy the project, or designated portion(s) thereof, for the use for which it is intended.
- B. Time as Essential Condition: It is understood and agreed that the commencement of and substantial completion of the work are essential conditions of this Agreement. It is further agreed that time is of the essence for each and every portion of the Contract Documents wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the Contract Documents any additional time is allowed for the completion of any work, the new time fixed by such extension shall be of the essence of this Agreement. It is understood and agreed that the times for the completion of the work are reasonable, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

- C. Progress and Completion: Contractor shall commence work promptly upon execution of this Agreement and shall prosecute and complete the work regularly, diligently, and uninterruptedly at such a rate of progress as will insure Substantial Completion within the stipulated number of calendar days.
- D. Liquidated Damages: It is expressly agreed between the Contractor and the Owner that the Contractor will be responsible for all damages which may arise due to the Contractor's failure to substantially complete the work within the above specified time. If the Contractor shall neglect, fail or refuse to complete the work within the specified number of days, or any extension thereof authorized by the Owner, Contractor agrees, as a part of the consideration for the execution of this Contract by the Owner, to pay the Owner the amount specified herein, not as a penalty, but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day, excluding Saturdays, Sundays and legal Holidays, that the Contractor shall be in default of Substantial completion after the date specified in the Agreement. Due to the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, said amount is agreed to be the amount of damages which the Owner would sustain, and said amount shall be retained from time to time by the Owner from current periodic estimates. The amount of liquidated damages shall be **insert dollar amount \$(0)** per day.

4. Performance of the Work

- A. Direction of the Work: The Contractor shall supervise and direct the Work, using his best skills and attention which shall not be less than such state of skill and attention generally rendered by the contracting profession for projects similar to the Project in scope, difficulty, and location. The Contractor shall maintain adequate supervisory personnel at the project site during the performance of the Work. He shall be solely responsible for all construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work under the Agreement.
- B. Responsibility for the Work: (1) The Contractor shall be responsible to the Owner for the acts and omissions of his employees, Subcontractors and their agents and employees, and other persons performing any of the Work under a contract with the Contractor. This obligation shall also extend to the presence on the Site of suppliers of materials or equipment, their employees, contractors, and agents engaged in the work.

(2) The Contractor shall not be relieved from his obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of the Owner in its administration of the Agreement, or by inspections, tests or approvals required or performed by persons other than the Contractor.
- C. Permits and Fees: Unless otherwise expressly provided, the Contractor shall secure and pay for all permits and fees, licenses, and inspections necessary for the proper execution and completion of the Work which are customarily secured after execution of the Agreement and which are legally required at the time the bids are received, and the same shall at all times be the property of the Owner and shall be delivered to the Owner upon completion of the Project.

- D. Notices, Compliance With Laws: (1) The Contractor shall give all notices and comply with all federal, state, and local laws, ordinances, rules, regulations, and lawful orders of any public authority bearing on the performance of the Work. The Contractor shall provide the Owner with reproductions of all permits, licenses and receipts for any fees paid. The Owner represents that it has disclosed to the Contractor all orders and requirements known to the Owner of any public authority particular to this Agreement.
- (2) If the Contractor observes that any of the Contract Documents are at variance with applicable laws, statutes, codes, and regulations in any respect, he shall promptly notify the Owner in writing, and any necessary changes shall be accomplished by appropriate modification.
- (3) If the Contractor performs any Work which he knows or should know is contrary to such laws, ordinances, rules, and regulations, and without such notice to the Owner, he shall assume full responsibility therefor and shall bear all costs attributable thereto.
- (4) In the performance of the Work, the Contractor shall comply with all applicable federal, state, and local laws and regulations including those relating to workplace and employee safety. The Contractor shall notify the Owner immediately of any conditions at the place of the work which violate said laws and regulations and shall take prompt action to correct and eliminate any such violations.
- E. Project Superintendent: The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site at all times during the progress of the Work. The superintendent shall represent the Contractor and all 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 confirmed on written request in each case.
- F. Progress Schedule: The Contractor, immediately after being awarded the Contract, shall prepare & submit for the Owner's information an estimated progress schedule for the Work. The progress schedule shall be related to the entire Project to the extent required by the Contract Documents and shall provide for expeditious and practicable execution of the Work.
- G. Drawings, Specifications and Submittals:
- (1) The Contractor shall maintain at the site for the Owner one record copy of all Drawings, Specifications, Addenda, Change Orders, and other Modifications, and "As-Built" Drawings and Specifications in good order and marked currently to record all changes made during construction, and approved Shop Drawings, Product Data and Samples. These shall be delivered to the Owner upon completion of the Work.
- (2) By approving and submitting Shop Drawings, Product Data and Samples, the Contractor represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto, or will do so, and that he has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

(3) The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Owner's approval of Shop Drawings, Product Data or Samples unless the Contractor has specifically informed the Owner in writing of such deviation at the time of submission and the Owner has given written approval to the specific deviation. The Contractor shall not be relieved from responsibility for errors or omissions in the Shop Drawings, Product Data or Samples by the Owner's approval thereof.

(4) The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data or Samples, to revisions other than those requested by the Owner on previous submittals.

(5) No portion of the Work requiring submission of a Shop Drawing, Product Data or Sample shall be commenced until the submittal has been approved by the Owner. All such portions of the Work shall be in accordance with approved submittals.

H. Protection of the Work and Owner's Property: The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this Agreement. He shall at all times safely guard and protect his own work, and that of adjacent property from damage. The Contractor shall replace or make good any such damage, loss, or injury. The Contractor shall clean the work area and restore it to its original condition upon completion of the work.

I. Quality of the Work: The Contractor shall perform the work in a good, workmanlike manner. The Contractor hereby guarantees that the entire work constructed by him under the Agreement will meet fully all requirements thereof as to quality of workmanship and materials. The Contractor hereby agrees to make at his own expense any repairs or replacements made necessary by defects in materials or workmanship supplied to him that become evident within **one (1) year** after the date of the final payment, and to restore to full compliance with the requirements set forth herein any part of the work constructed hereunder, which during said **one (1) year** period is found to be deficient with respect to any provisions of the Contract Documents. The Contractor also agrees to hold the Owner harmless from claims of any kind arising from damage due to said defects. The Contractor shall make all repairs and replacements promptly upon receipt of written orders for same from the Owner. If the Contractor fails to make the repairs and replacements promptly, the Owner may do the work and the Contractor shall be liable to the Owner for the cost thereof.

J. Warranty: The Contractor guarantees to the Owner that all materials incorporated into the work will be new unless otherwise specified or agreed. Prior to final payment, the Contractor shall deliver to the Owner all manufacturers' warranties, together with such endorsements or assignments as are necessary to ensure to the Owner the full rights and benefits of such warranties.

5. Affirmative Action/Equal Employment Opportunity

The Contractor is directed to comply with all applicable State Laws, Ordinances, Bylaws, and rules and regulations regarding affirmative action/equal employment opportunity requirements. Failure of the Contractor to comply with any such law, rule or regulation shall constitute grounds for the Owner to terminate the Agreement.

6. Site Information Not Guaranteed, Contractor's Investigation

All information given in the Contract Documents relating to subsurface and other conditions, natural phenomena, existing pipes, and other structures is from the best sources at present available to the Owner. All such information is furnished only for the information and convenience of the Contractor and is not guaranteed.

It is agreed and understood that the Owner does not warrant or guarantee that the subsurface or other conditions, natural phenomena, existing pipes, or other structures encountered during construction will be the same as those indicated in the Contract Documents.

Contractor has familiarized himself with the nature and extent of the Contract Documents, work, locality, and with all local conditions and federal, state, and local laws, rules, ordinances, and regulations that in any manner may affect costs, progress, or performance of the work. Contractor has made, or has caused to be made, examinations, investigations, and tests and studies of such reports and related data in addition to those referred to in the paragraph above as he deems necessary for the performance of the work at the Contract Price, within the Contract Time, and in accordance with the other Terms and Conditions of the Contract Documents; and no additional examinations, tests, investigations, reports, and similar data are or will be required by the Contractor for such purposes.

Contractor has correlated the results of all such observations, examinations, investigations, tests, reports, and data with the Contract Documents. Contractor has given the Owner written notice of all conflicts, errors, or discrepancies that he has discovered in the Contract Documents, and the resolution thereof by the Owner is acceptable to the Contractor.

It is further agreed and understood that the Contractor shall not use or be entitled to use any of the information made available to him or obtained in any examination made by him in any manner as a basis of or ground for any claim or demand against the Owner, arising from or by reason of any variance which may exist between the information made available and the actual subsurface conditions or other conditions or structures actually encountered during the construction work, except as may otherwise be expressly provided for in the Contract Documents.

7. Project Architect or Engineer

There is a project architect-engineer for this project who is **Brown Richardson & Rowe Inc.** Except as otherwise indicated in the Contract Documents, the Architect/Engineer shall be a representative of the Owner, and the Contractor shall direct all communications, questions and comments on the work and the performance thereof to the Architect/Engineer. Except as otherwise provided, the Architect/Engineer shall have all the authority of the Owner set forth in the Contract Documents. In general, the Architect/Engineer shall have the authority to review the performance of the work, reject work which is defective or otherwise does not comply with the Contract Documents and to order the Contractor to remedy defective work and take such actions which are necessary to make the work conform to the Contract Documents.

8. Wage Rates

Prevailing Wage Rates as determined by the Commissioner of the Department of Labor and Workforce Development under the provisions of Massachusetts General Laws, Chapter 149, Section 26 to 27G, as amended, apply to this project. It is the responsibility of the Contractor to provide the Town with certified payrolls and to comply with all requirements of the above-cited statutes.

The schedules of prevailing wage rates are included in the Contract Documents.

9. Payments to the Contractor

Within **fifteen (15) days** after receipt from the Contractor of a proper and satisfactory periodic estimate requesting payment of the amount due for the preceding month, the Owner shall have **fifteen (15) days** to make payment for:

- A. The work performed during the preceding month.
- B. 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 Owner.
- C. Less the following retention items:
 - 1. A retention based on an estimate of the fair value of the Owner's claims against the Contractor.
 - 2. A retention for direct payments to Subcontractors, if any, based on demands for same in accordance with the provisions of Section 39F of Chapter 30 of the General Laws.
 - 3. A retention not exceeding **five percent (5%)** of the approved amount of the periodic payment.
- D. After the receipt of a periodic estimate requesting final payment and within **sixty-five (65) days** after the Contractor fully completes the Work, or substantially completes the Work so that the value of the Work remaining to be done is, on the estimate of the Owner, less than **1%** of the original Contract Price, or substantially completes the Work and the Owner takes

possession or occupancy, whichever occurs first, the Owner shall pay the Contractor the entire balance due on the Contract less:

1. A retention based on an estimate of the fair value of the Owner's claims against the Contractor and of the cost of completing the incomplete and unsatisfactory items of work.
2. A retention for direct payments to Subcontractors, if any, based on demands of same in accordance with the provisions of Section 39F of Chapter 30 of the General Laws, 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 of Chapter 30 of the General Laws.

If the Owner fails to make payment as herein provided, there shall be added to each such payment, daily interest at the rate of 3 percentage points above the rediscount rate than 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 of a periodic estimate for final payment until **fifteen (15) days** after receipt of such a periodic estimate by the Owner as provided in the first paragraph of this Article. The Contractor agrees to pay to each subcontractor a portion of any such interest paid in accordance with the amount due each subcontractor.

The Owner may make changes in any periodic estimate submitted by the Contractor and the payment due on said periodic estimate shall be computed in accordance with the changes so made, and such changes and any requirements for a corrected periodic estimate shall not affect the due date for the periodic payment or the date for the commencement of interest charges on the amount of the periodic payment computed in accordance with the changes made, as provided herein; provided further, that the Owner may, within **seven (7) days** after receipt, return to the Contractor for correction, any periodic estimate which is not in acceptable form or which contains computations not arithmetically correct, and in that event, the date of receipt of such periodic estimate shall be the date of receipt of the corrected periodic estimate in proper form and with arithmetically correct computations. The date of receipt of a periodic estimate received on a Saturday shall be the first working day thereafter.

- E. Changes in the Work: No changes in the work covered by the approved Contract Documents shall be made without prior written approval of the Owner. Charges or credits for the work covered by the approved change shall be determined by one or more, or a combination of the following methods:
- (a) Unit bid prices previously approved.
 - (b) An agreed lump sum.
 - (c) The actual cost of:
 - (1) Labor.
 - (2) Materials entering permanently into the work.

- (3) The ownership or rental cost of construction equipment during the time of use on the extra work.
- (4) Power and consumable supplies for the operation of power equipment.
- (5) Wages to be paid.

To the cost under (c) there shall be added a fixed fee to be agreed upon but not to exceed **fifteen percent (15%)** of the actual cost of the work. The fee shall be compensation to cover the cost of supervision, overhead, bond, profit, and any other general expenses.

F. Claims for Additional Costs: If the Contractor wishes to make a claim for an increase in the Contract Sum, he shall give the Owner written notice thereof within twenty days after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor before proceeding to execute the Work, except in an emergency endangering life or property. No such claim shall be valid unless so made. Any change in the Contract Sum resulting from such claim shall be authorized by Change Order.

The Contractor hereby agrees that the Contractor shall have no claim for damages of any kind against the City on account of any delay in the commencement or performance of the work and/or any hindrance, delay or suspension of any portion of the work including, but not limited to, any claims or damages on account of having to perform out of sequence work, claims for damages on account of loss of production or other interference with the work whether such delay is caused by the City or otherwise, except as and to the extent expressly provided under G.L. c.30, §390 in the case of written orders by the City. The Contractor acknowledges that the Contractor's sole remedy for any such claim will be an extension of time as provided herein.

10. Final Payment, Effect

The acceptance of final payment by the Contractor shall constitute a waiver of all claims by the Contractor arising under the Agreement.

11. Contract Documents

The Contract Documents consist of the following, together with this Agreement:

- Invitation to Bid
- Instructions to Bidders
- This Contract Form
- Bid Form
- Labor & Materials Payment Bond
- Non-Collusion Certificate
- Tax Compliance Certificate
- Clerk's Certificate of Corporate Vote
- Certificate of Insurance
- General Conditions
- Supplementary General Conditions

General Requirements
Specifications and Addenda
Contract Drawings
Schedule of Prevailing Wages

12. Terms Required By Law

This Agreement shall be considered to include all terms required to be included in it by the Massachusetts General Laws, and all other laws, as though such terms were set forth in full herein.

13. Indemnification

To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold harmless the Owner and other “Indemnified Parties”, from and against all claims, liabilities, damages, losses, penalties, recoveries, suits, judgments, executions, costs and expenses, including but not limited to attorneys’ or injunction-related fees, arising out of or resulting from (or alleged to be arising out of or resulting from) this Agreement, and the acts or omissions of, the Contractor or anyone for whom the Contractor is responsible, regardless of negligence, and regardless of whether such claim, damage, loss or expense is caused in part by “Indemnified Parties”.

- A. Indemnified Parties: “Indemnified Parties” shall include any parties entitled to indemnification, including but not limited to, the Owner and all public officials, board members, officers, members, partners, directors, employees, independent contractors, consultants, volunteers, interns, attorneys, beneficiaries, agents, representatives, lenders, stakeholders and affiliates, and all of their respective successors and assigns (collectively the “Indemnified Parties”), in both their individual and official capacities, and anyone else the Owner requests, each an “Indemnified Party” and collectively “Indemnified Parties”.
- B. Hired Parties: As it pertains to work subcontracted out by or to supplies procured by the Contractor to allow it to perform services as required by this agreement, the Contractor shall enter into written and executed contracts, containing hold harmless, defense, and indemnification clauses in favor of the “Indemnified Parties”, with all subcontractors, vendors, agents and other “hired parties” who will provide materials, services or perform Work, construction or other work in connection with the Contract, which shall offer no less protection to the “Indemnified Parties” than indemnification from the Contractor. For the purposes of this Exhibit, each entity is a “Hired Party” or collectively “Hired Parties”. The Contractor shall cause its “Hired Parties” to comply with the insurance requirements for “Hired Parties” in this Exhibit. Contractor shall be responsible for obtaining certificates of insurance and endorsements for all coverage required from each “Hired Party” prior to the “Hired Party” beginning work at the Project or procuring materials and obtaining and maintaining renewal certificates of insurance as required in **Section 00800**. Contractor shall provide copies of certificates of insurance and endorsements received from “Hired Parties” to the District upon request.

14. Insurance

A. Contractor Insurance Requirements

The undersigned contractor or subcontractor (“Contractor”) has been hired by the Owner to perform certain work (“Work”) as outlined in this Agreement.

1. Procurement and Term: Contractor, at its expense, shall obtain and keep in force, or cause to be obtained and kept in force, policies of insurance described in **Section 00800**, throughout and in accordance with the terms of the Contract. Each policy shall be obtained and be made effective prior to the start date of the Contract, or the performance of any activity intended to be insured by each policy, and maintained for the full term of the Contract or for such longer period as this project requires. Provisions relating to products and completed operations, professional liability, pollution legal liability and additional insured shall survive the expiration or termination of the Contract. This agreement shall survive the termination and/or expiration of any such policy. Self-insurance is not allowed.
2. Evidence of Insurance: Contractor shall furnish to the Owner, prior to beginning Work under this Contract, certificates of insurance evidencing all required insurance on a standard Acord form. Evidence of liability, workers’ compensation and miscellaneous coverage shall be provided on a current **ACORD 25 form - Certificate of Liability Insurance**. All required endorsements shall be attached to the certificates of insurance. Certificates shall show all applicable deductibles or self-insured retentions. Certificates evidencing additional or renewal policies shall be provided at least thirty (**30**) days prior to the expiration of a policy. The Owner reserves the right to inspect each certificate of insurance, endorsement, or insurance policy to verify the required scope of insurance. The certificate holder name and address shall be The City of Leominster (“Owner”). Additional Certificates may be required for other “Indemnified Parties”.
3. Obligation to Procure: Receipt of insurance certificates, or copies of policies or endorsements without objection by the Owner does not constitute acceptance or approval of insurance nor does it relieve Contractor or a “Hired Party” from their respective obligations to provide the required insurance. The obligation to procure and maintain any insurance required is a separate responsibility of Contractor and independent of the duty to furnish a copy or certificate of such insurance policies. If the Owner is damaged by the Contractor’s failure to maintain such insurance and to comply with the terms of this agreement, then the Contractor shall be responsible for all costs and damages to the Owner attributable to such failure. To the extent of the Contractor’s inability to obtain all insurance required by this Exhibit, the Owner, at any time, can procure such insurance for Contractor at commercially reasonable rates.
4. Minimum Requirements: The Owner does not warrant that meeting the required insurance coverage and limits will be sufficient to protect the interests of the Contractor and “Hired Parties”. These are minimum requirements to protect the interest of the Owner.

5. Evidence of Payment of Insurance Premiums: Contractor shall furnish to Owner upon request evidence of payment of insurance premiums for any insurance policy required by this Contract. The Contractor shall furnish to the Owner upon request duplicate receipts or satisfactory evidence of the payment of all premiums on any and all insurance required to be carried by the Contractor in accordance with this Contract.
6. Additional Insureds: Each Commercial General Liability, Automobile Liability, Umbrella, or Excess Liability and Pollution Legal Liability policy provided by the Contractor and their “Hired Parties” shall be endorsed to name the “Indemnified Parties” as Additional Insureds. The Commercial General Liability policy shall name the “Indemnified Parties” as Additional Insureds for ongoing and completed operations on a form no less broad than **ISO CG 20 10** or a combination of ISO forms **CG 20 10 07** and **CG 20 37 07** (or forms providing equivalent coverage). The endorsement form(s) shall state, “the City of Leominster, all public officials, board members, officers, members, partners, directors, employees, independent contractors, consultants, volunteers, interns, attorneys, beneficiaries, agents, representatives, lenders, stakeholders and affiliates, and all of their respective successors and assigns (collectively the “Indemnified Parties”), in both their individual and official capacities, and anyone else the Owner requests” as the Additional Insured and shall state “All Locations” as the Location. Additional Insured coverage shall not require a contract between the Named Insured and any Additional Insured (“privity of contract”). Copies of the Additional Insured endorsement(s) shall be attached to the certificate of insurance and shall be provided prior to any work being performed under this Agreement.
7. Primary and Non-Contributory: All required coverage of Contractor and “Hired Parties” shall be primary to any coverage that may be available to the Owner and “Indemnified Parties”. The coverage afforded shall be primary as respects any claims, losses, damages, expenses, or liabilities arising out of, relating to in any way, or incident to the Work or any activities of Contractor or “Hired Parties”, regardless whether instituted against the Owner alone or jointly with the Contractor or “Hired Parties” or others, and noncontributing with any other insurance maintained by Additional Insureds.
8. Waiver of Subrogation/Waiver of Transfer of Right to Recover from Others: To the fullest extent allowed by law, Contractor and “Hired Parties” shall waive all rights of recovery and subrogation, regardless of negligence, against “Indemnified Parties”. Additionally, Contractor and “Hired Parties” insurance policies shall allow for the waiver, or be endorsed to waive, of rights of recovery by subrogation, regardless of negligence, as described in the Insurance Policy Requirements sections below.
9. Cancellation Notice Requirement: Each required policy shall contain, or be endorsed to contain, a provision that the policies or coverage cannot be canceled, terminated, voided, suspended, lapsed, modified, or reduced except after thirty (30) days’ (or for non-payment of premium, 10 days’) prior written notice to “Indemnified Parties”. For any insurance required by this Exhibit where the insurance carrier will not modify the policy to grant the above stated notice of cancellation, or anytime the Contractor becomes aware of an impending or actual cancellation, non-renewal, expiration, or reduction in coverage of any insurance required by this Exhibit or the Contract

Documents, the Contractor shall provide written notice to the City within two (2) business days of the date the Contractor becomes aware of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage. The Contractor shall require the same Cancellation Notice Requirement from its “Hired Parties”.

10. Insurance Company Rating: All insurance required by this Contract shall be provided by reputable insurers authorized to do business in the Commonwealth of Massachusetts, with current **AM Best ratings** of not less than **A- VIII**.
11. Limits: The limits of insurance for each required policy shall be no less than required in **Section 00800** and may be provided through a combination of primary and umbrella or excess liability policies.
12. Deductibles: Contractor and “Hired Parties” shall be exclusively responsible for any deductibles or self-insured retentions applicable to the insurance provided.

B. General Coverage Term and Provision Requirements

1. Owner Coverage Requirements (For Building Projects): The Owner may purchase and maintain coverage for Builder’s Risk as described under Insurance Policy Requirements in this Agreement if it deems prudent. If the circumstances indicate that it would be more expedient for the Contractor to purchase and maintain coverage for Builder’s Risk, the Owner may order the Contractor to put the appropriate Builder’s Risk in place.
2. Contractor Coverage Requirements (Pursuant to Scope of Work): Contractor shall purchase and maintain coverage for Commercial General Liability, Commercial Automobile Liability, Excess or Umbrella Liability, Workers’ Compensation and Employers’ Liability, Contractor Controlled Insurance Program, Professional Liability, Aircraft (Unmanned Aircraft) Insurance, Contractor’s Pollution Liability, Railroad Protective Liability Insurance, if applicable, and Valuable Papers, as described under Insurance Policy Requirements in this Agreement.
3. “Hired Parties” Coverage Requirements (Pursuant to Scope of Work): “Hired Parties” shall purchase and maintain coverage for Commercial General Liability, Commercial Automobile Liability, Excess or Umbrella Liability, Workers’ Compensation and Employers’ Liability, and, if applicable for the scope of work, Professional Liability, Aircraft (Unmanned Aircraft) Insurance and Contractor’s Pollution Liability, as described under Insurance Policy Requirements in this Agreement or as required by any other contract documents or insurance requirements if more stringent.

C. Insurance Policy Requirements

1. Commercial General Liability (CGL): Contractor and “Hired Parties” shall purchase and maintain commercial general liability written on an occurrence basis, and such coverage shall be at least as broad as the broadest available version of Insurance Services Office form **CG 00 01**. No amending or exclusionary endorsements material to any parties’ obligations in the Contract may be attached. There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability assumed under an insured contract or limiting the liability owed to the “Indemnified Parties” to that limit required in contract. The policy shall provide for separation of insureds and shall contain no insured vs. insured exclusion. The policy shall contain Additional Insured endorsements as described in the Additional Insured section. The policy shall contain a Waiver of Transfer of Rights of Recovery Against Others to Us (**ISO Form CG2404** or equivalent) endorsement naming the “Indemnified Parties” in the endorsement schedule. Products and Completed Operations coverage shall be maintained for 6 years after Final Acceptance or the expiration or termination of the Agreement, whichever is greater. Throughout the **6-year** period, Contractor and “Hired Parties” shall submit renewal insurance certificates, including the Additional Insured endorsements, as evidence that coverage is being maintained. The policy shall contain an endorsement granting a per project aggregate limit for the Project.
2. Commercial Automobile Liability: Contractor and “Hired Parties” shall purchase and maintain commercial automobile liability coverage for all owned (if any), non-owned and hired vehicles, including trailers. Coverage shall be no less broad than as provided under **symbol 1**. If party does not own autos, **symbols 8 and 9** shall be provided on the automobile policy, or hired and non-owned coverage shall be provided on commercial general liability policy. If hauling contaminants and/or pollutants, Contractor or “Hired Party” must adhere to **Sections 29 and 30 of the Motor Carrier Act of 1980** and provide coverage form **MCS-90**. “Indemnified Parties” shall be named as Additional Insureds. The policy shall allow or include a Waiver of Transfer of Rights of Recovery Against Others to Us endorsement naming the “Indemnified Parties” in the endorsement schedule.
3. Excess or Umbrella Liability (Pursuant to Scope of Work): Contractor and “Hired Parties” shall purchase and maintain a follow-form excess or umbrella liability policy, and policies in excess of those policies, providing excess coverage over Commercial General Liability, Automobile Liability and Employers Liability. Coverage provided by the excess or umbrella policy(s) shall be no less broad than the coverage for Commercial General Liability, Automobile Liability and Employers Liability described in this Exhibit. Products and Completed Operations Liability under the Commercial General Liability shall be maintained for **6 years** after Final Acceptance or the expiration or termination of the Contract, whichever is greater. The policy shall contain Additional Insured endorsements or follow form coverage as described in the Additional Insured section. The policy shall allow or include a Waiver of Transfer of Rights of Recovery Against Others to Us endorsement naming the “Indemnified Parties” in the endorsement schedule. Any Excess or Umbrella liability coverage will not require contribution before it will apply. The policy shall contain an endorsement granting a per project aggregate limit for the Project.

See **Section 00800** Supplemental Conditions §SC 3.1 Contractors’ Liability Insurance for Limits.

15. Notice

All notices required to be given hereunder shall be in writing and delivered to, or mailed first class to, the parties' respective addresses stated above. In the event that immediate notice is required, it may be given by telephone or facsimile, but shall, to the extent possible, be followed by notice in writing in the manner set forth above.

16. Termination

- A. Each party shall have the right to terminate this Agreement in the event of a failure of the other party to comply with the terms of the Agreement. Such termination shall be effective upon **seven (7) days'** notice to the party in default and the failure within that time of said party to cure its default.
- B. The Owner shall have the right to terminate the Agreement without cause, upon **ten (10) days'** written notice to the Contractor. In the event that the Agreement is terminated pursuant to this subparagraph, the Contractor shall be reimbursed in accordance with the Contract Documents for all Work performed up to the termination date, and for all materials or equipment not incorporated in the Work but delivered and suitably stored at the site. Payment for material or equipment stored at the site shall be conditioned upon submission by the Contractor of bills of sale or such other evidence as is satisfactory to Owner to establish the Owner's title to such material or equipment or otherwise protect the Owner's interests.

17. Miscellaneous

- A. **Royalties and Patents:** The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified; but if the Contractor believes or has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Owner, and thereafter the Owner insists on the use of the design, process or products specified.
- B. **Assignment:** The Contractor shall not assign or transfer any of its rights, duties, or obligations under this Agreement without the written approval of the Owner.
- C. **Governing Law:** This Agreement shall be governed by and construed in accordance with the law of the Commonwealth of Massachusetts.

CERTIFICATE OF VOTE
(to be filed if Contractor is a Corporation)

I, _____, hereby certify that I am the duly qualified
(Secretary of the Corporation)

and acting Secretary of _____ and I further certify that a meeting of the

(Name of Corporation)

Directors of said Company, duly called and held on _____, at which
(Date of Meeting)

all Directors were present and voting, the following vote was unanimously passed:

VOTED: To authorize and empower

Anyone acting singly, to execute Forms of General Bid, Contracts or Bonds on behalf of the Corporation.

I further certify that the above vote is still in effect and has not been changed or modified in any respect.

By: _____
(Secretary of Corporation)

A True Copy:

Attest: _____
(Notary Public)

My Commission Expires: _____
(Date)

**CERTIFICATIONS REQUIRED BY LAW
FOR PUBLIC CONSTRUCTION CONTRACTS**

You must COMPLETE and SIGN the following certifications. You must also print, at the bottom of this page, the name of the contractor for whom these certifications are submitted.

TAX COMPLIANCE

Pursuant to Chapter 62C of the Massachusetts General Laws, Section 49A(b), I, the undersigned, authorized signatory for the below named contractor, do hereby certify under the pains and penalties of perjury that said contractor has complied with all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

NON-COLLUSION

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

PUBLIC CONTRACTOR DEBARMENT

The undersigned certifies under penalty of perjury that the below named contractor 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.

OSHA TRAINING

Pursuant to G.L. c. 30, §39S, the Contractor hereby certifies under penalties of perjury as follows:

- (1) Contractor is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work,
- (2) 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 they shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and
- (3) All employees to be employed in the work subject to this contract 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.

COMPLETE AND SIGN BELOW:

Authorized Person's Signature

Date

Print Name & Title of Signatory

Name of Contractor

SECTION 00610

PERFORMANCE BOND

This page intentionally left blank.

SECTION 00620

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That we _____

_____ a _____
(Name of Contractor) (Corporation, Partnership, Joint Venture or
Individual)

hereinafter called "Principal" and _____ of _____,
(Surety)

State of _____ hereinafter called the "Surety" and licensed by the State
(City and State)

Division of Insurance to do business under the laws of the Commonwealth of Massachusetts, are held and firmly bound to the City/Town of _____, Massachusetts, hereinafter called "Owner", in the penal sum of _____ Dollars (\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered into a certain contract with the Owner, dated the _____ day of _____, 20____, for the construction described as follows:

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work, and all insurance premiums on said work, and for all labor, performed in such work whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of this contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in ____ () counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20__.

ATTEST:

_____ By _____
Surety
(Attorney-in-Fact)

_____ (SEAL) _____
(Address-Zip Code)

Witness as to Surety

(Address-Zip Code)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is a Partnership, all partners should execute Bond.

SECTION 00800

SUPPLEMENTAL CONDITIONS

	<u>Page</u>
1. Introduction	2
2. Prevailing Wage Rates	2
3. Insurance Requirements	2

SECTION 00850 - Incorporation of Applicable Provisions of the Massachusetts General Laws

Attachment A - Wage Rates and Certificate
of Compliance

§ SC 1.1 INTRODUCTION

The following provisions modify, change, delete from or add to Section 00500 Agreement. Where any Subsection of the Agreement is modified or any Article Paragraph, Subparagraph or Clause thereof is modified or deleted by these Supplemental Conditions, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect.

§ SC 2.1 PREVAILING WAGE

In accordance with General Laws Chapter 149, Section 26 through 27D, the Contractor is obligated to comply with the prevailing wage rates established by the Commissioner of the Department of Labor and Workforce Development for mechanics, apprentices, chauffeurs, teamsters, and laborers employed on the Project. The schedule of applicable prevailing wage rates for the Project, together with a Certificate of Compliance therewith, are set forth in Attachment A herein.

§ SC 3.1 CONTRACTOR'S LIABILITY INSURANCE

Limits of Liability: The total limits of liability for commercial general liability, including excess or umbrella liability, and automobile liability shall be no less than the following:

Category -- A Contractor with or without a Hired Party is subject to higher limits for work which is structural; requires design or engineering; requires earth movement or excavation; or otherwise exposes others to potential severe injury or damage/downtime	Contractor with no Hired Parties (Contracts Under \$1,000,000)	Contractor and/or Hired Parties	Contractor and/or Hired Parties (Contracts Under \$1,000,000)	Contractor and/or Hired Parties (Contracts \$1,000,000-\$10,000,000)	Contractor and/or Hired Parties (Contracts \$10,000,001-\$25,000,000)	Contractor and/or Hired Parties (Contracts over \$25,000,000)
General Liability - each occurrence	\$1,000,000	\$2,000,000	\$2,000,000	\$5,000,000	\$10,000,000	TBD
General Liability - personal/advertising injury	\$1,000,000	\$2,000,000	\$2,000,000	\$5,000,000	\$10,000,000	TBD
General Liability - products and completed operations aggregate	\$1,000,000	\$2,000,000	\$2,000,000	\$5,000,000	\$10,000,000	TBD
General Liability - general aggregate	\$1,000,000	\$2,000,000	\$2,000,000	\$5,000,000	\$10,000,000	TBD
Medical Expense –any one person	\$5,000	\$10,000	\$10,000	\$10,000	\$10,000	TBD
Automobile Liability – combined single limit	\$250,000	\$2,000,000	\$2,000,000	\$5,000,000	\$10,000,000	TBD

(For All Projects)

- A. Workers' Compensation and Employer's Liability: Contractor and "Hired Parties" shall purchase and maintain statutory workers compensation coverage compliant with the Commonwealth of Massachusetts, and any other jurisdictions in which workers are residents, or through which they may travel to perform Work, as required by applicable Law and imposed by worker's compensation, occupational disease or similar Laws, including the Longshore and Harbor Workers' Act, the Federal Employers' Liability and the Jones Act, if applicable. No proprietor, partner, executive officer, or member shall be excluded. Employers' liability limits shall not be less than: **\$1,000,000 each accident, \$1,000,000 by disease-policy limit, \$1,000,000 by disease-each employee** (the MA Statutory Endorsement for Employer Liability Limits will be sufficient in lieu of the higher limits outlined). The policy shall contain a Waiver of Our Rights to Recover from Others endorsement naming the "Indemnified Parties" in the endorsement schedule.

(Pursuant to Scope of Work)

- B. Professional Liability Insurance: Contractor, and "Hired Parties" as required by Contractor, shall purchase, and maintain professional liability insurance appropriate to parties' profession. If any of the Work performed by Contractor or its "Hired Parties" includes the rendering of professional services including, but not limited to, architectural, engineering, design, or consulting services, Contractor shall maintain and/or require any "Hired Party" involved in the same or similar services, to maintain Professional Liability or Errors and Omissions insurance. Coverage shall apply to liability for a professional error, act, or omission arising out of the services or Work as defined in the Contract. Preference is made if coverage extends to no-fault rectification expenses. If coverage is written on a claims-made basis, any retroactive date shall be no later than the effective date of the Contract; and continuous coverage shall be maintained, or an extended discovery period exercised for **6 years** beginning from the time that work under the Contract is completed. Contractor shall submit either (i) renewal insurance certificates to evidence coverage is maintained throughout the **6-year** period; or (ii) a **6-year** extended reporting period endorsement. Limits shall not be less than **\$5,000,000 per claim** and **\$5,000,000 annual aggregate** for Contractor and **\$2,000,000 per claim** and **\$2,000,000 annual aggregate** for "Hired Party"
- C. Aircraft (Unmanned Aerial Vehicle/Drone) Insurance: If Contractor or "Hired Parties" use, lease or charter any type of unmanned aerial vehicles (aka drones), for the Work, prior to commencing any such Work, Contractor and "Hired Parties" shall provide evidence of unmanned aircraft liability insurance, with a limit of not less than **\$1,000,000 per accident**, or higher limits as may be required by the Owner. "Indemnified Parties" shall be added as Additional Insureds on all aircraft policies. Evidence of aircraft insurance, including Additional Insured endorsement(s) shall be provided to the Owner prior to use of any aircraft.
- D. Contractor's Pollution Liability: Contractor and "Hired Parties" as required by Contractor, shall purchase, and maintain coverage for bodily injury and property damage, including loss of use resulting from liability arising out of pollution related exposures, including, but not limited, to tank removal, removal of contaminated soil, asbestos abatement, lead paint abatement and the like. The policy shall cover liability as a result of the process of removal, storage, transport and disposal of hazardous waste and contaminated soil and/or asbestos abatement. The policy shall include coverage for onsite and offsite bodily injury and loss of,

damage to, or loss of use of property, directly or indirectly arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants, or pollutants into or upon the land, the atmosphere or any water course or body of water, whether it be gradual or sudden and accidental. The policy shall also include defense and cleanup costs. Coverage shall name the “Indemnified Parties” as Additional Insured for up to **6 years** beyond completion of work. Limits shall not be less than **\$5,000,000 per claim** and **\$5,000,000 aggregate**.

- E. Railroad Protective Liability Insurance: If required, Contractor shall procure, or cause to be procured, and keep in force, or cause to be kept in force, any coverage as may be required by any railroad or railroad agreement, in each case, as a condition of a railroad’s consent to enter into railroad facilities or property on which a railroad has real property rights. Such policy shall be effective during the period any Work is being performed within **fifty (50) feet** of any railroad right of way.
- F. Valuable Papers: Contractor shall provide Valuable Papers insurance in an amount sufficient to assure the restoration of any plans, drawings, computations, field notes, Building Information Modeling (BIM) or other similar data relating to work covered by the agreement in the event of loss or destruction while in the custody of any Party until the final fee payment is made or all data is turned over to the Owner, and shall include coverage for relevant electronic media including, but not limited to, documents stored in computer aided design drafting (CADD) systems.
- G. Builder’s Risk: The Owner may purchase builders risk on ISO Causes of Loss-Special Form coverage form or its equivalent applicable to the ongoing Work on replacement cost basis on behalf of Contractor, subcontractors, persons furnishing labor and/or materials for the Work (collectively, “Builders Risk Insureds”) and “Indemnified Parties”. Such policy shall be subject to limits and deductibles the Owner deems appropriate for hard costs and soft costs. Notwithstanding the Owner’s purchase of the Builders Risk, the Contractor shall be completely responsible for the proper care and protection of the Work. The Contractor shall be responsible for all at fault losses, and the Contractor shall promptly, and in any event so as not to delay the progress of the Work, replace any damaged property or reimburse the Owner for any damaged property.
- H. Surety Bonds: The Contractor must ensure that no liens exist upon completion of the work and must ensure that hired contractors are 100% bonded for the Work.

SECTION 00850

Incorporation of Applicable Provisions of the Massachusetts General Laws

Certain provisions of the Massachusetts General Laws are applicable to Construction contracts including, but not limited to, those contained in Chapter 30 and Chapter 149. All applicable provisions of the Massachusetts General Laws are incorporated into the Contract as if fully set forth herein and shall prevail over any conflicting provisions of the General or Supplemental General Conditions.

SECTION 00900

SPECIFICATIONS

This page intentionally blank.

Twin Cities Rail Trail Phase III
The City of Leominster
Leominster, MA

Bid Set
December 11, 2024

PART A

TABLE OF CONTENTS: PART A

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE NO.</u>
DIVISION 01: GENERAL REQUIREMENTS		
00 73 00	SUPPLEMENTARY CONDITIONS	00 73 00-1 thru 00 73 00-9
01 30 00	FIELD ENGINEERING AND PROCEDURAL REQUIREMENTS	01 30 00-1 thru 01 30 00-5
01 33 00	SUBMITTAL PROCEDURES	01 33 00-1 thru 01 33 00-8
01 41 26	CONSTRUCTION MANAGEMENT PLAN	01 41 26-1 thru 01 41 26-2
01 42 13	TECHNICAL ABBREVIATIONS AND ACRONYMS	03 30 00-1 thru 03 30 00-2
01 45 00	QUALITY CONTROL	01 45 00-1 thru 01 45 00-3
01 50 00	TEMPORARY FACILITIES AND CONTROLS	03 30 00-1 thru 03 30 00-5
01 60 00	PRODUCT REQUIREMENTS	01 60 00-1 thru 01 60 00-3
01 70 00	EXECUTION AND CLOSEOUT REQUIREMENTS	01 70 00-1 thru 01 70 00-4

END OF TABLE OF CONTENTS: PART A

SECTION 00 73 00
SUPPLEMENTARY CONDITIONS

PART 1 - GENERAL

1.01 DEFINITIONS

- A. General: Except as specifically defined otherwise, the following definitions supplement definitions of the Contract, General Conditions, Special Conditions, Technical Specifications, and other general contract documents, and apply generally to the work.
1. Property Owner: City of Leominster, Massachusetts. All Contractor correspondence should be delivered to the City of Leominster Mayor's Office, 25 West Street, Leominster MA 01453.
 2. Awarding Authority: City of Leominster, Massachusetts.
 3. Landscape Architect: Referred to in Contract Documents as Landscape Architect shall mean Brown Richardson & Rowe, Inc
 4. Engineer: Referred to in Contract Documents as Engineer shall mean Stantec Consulting Services, Inc; or City of Leominster Engineer.
 4. Indicated: Shown on drawings by notes, graphics, or schedules, or written into other portions of contract documents. Terms such as "shown", "noted", "scheduled" and "specified" have same meaning as "indicated" and are used to assist the reader in locating particular information.
 5. Directed, Requested, Approved, Accepted, etc.: These terms imply, "by the Owner", unless otherwise indicated.
 6. Approved by Landscape Architect/ Engineer/ Owner: In no case releases Contractor from responsibility to fulfill requirements of contract documents.
 7. Project Site: As defined as within the limit of work as shown on the Contract Drawings. The City will provide a contractor storage area within close proximity of the site but not including the TD Bank parking lot
 8. Furnish: Supply and deliver to project site, ready for unloading, unpacking, assembly, installation and similar subsequent requirements.
 9. Install: Operations at project site including: unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar requirements.
 10. Provide: Furnish and install, complete and ready for intended use.

11. Remove: Complete removal, loading, transporting, permits, and legal disposal off-site by the Contractor of all designated materials in accordance with local, state and federal regulations, at the Contractor's expense.
12. Installer: Entity (firm or person) engaged to install work, by Contractor, subcontractor or sub-contractor. Installers are required to be skilled experts in work they are engaged to install.
13. Specification Text Format: Underscoring facilitates scan reading, no meaning. Imperative language is directed at Contractor, unless otherwise noted.
14. Overlapping/Conflicting Requirements: The most stringent language applies, unless a less stringent requirement is written directly into contract documents as acceptable. Refer uncertainties to Owner for decision before proceeding.
15. Minimum Requirements: Indicated requirements are for a specific minimum acceptable level of quality/quantity, as recognized in the industry. Actual work must comply (within specified tolerances) or may exceed minimums within reasonable limits. Refer uncertainties to Owner for decision before proceeding.
16. Abbreviations, Plural Words: Abbreviations, where not defined in contract documents, will be interpreted to mean the normal construction industry terminology, determined by recognized grammatical rules. Plural words will be interpreted as singular and singular works will be interpreted as plural where applicable for context of contract documents.

1.02 PROJECT SITE

- A. The Twin Cities Rail Trail Phase 3 is located between Water Street and Main Street, along the former CSX Transportation right of way. Phase 3 improvements are to the limit of work line as shown on Contract Drawings.

1.03 TIME FOR COMPLETION AND SEQUENCE OF WORK

- A. The work which the Contractor is required to perform under this Contract shall be commenced at the time stipulated by the Owner in the Notice to Proceed to the Contractor and shall be fully completed by **June 30, 2026**.
- B. The Contractor shall employ sufficient equipment and workers to complete the installation as expeditiously as possible as directed by the City Engineer. If, in the opinion of the Owner the progress of the work of the Contractor does not, at any time, clearly demonstrate that completion of the installation will meet with the approval of the Owner, the Owner reserves the right to require the Contractor to employ such additional equipment and workmen as required, and to work overtime hours to assure completion dates, all without additional cost to the Owner.
- C. No night, Saturday, Sunday, or holiday work requiring the presence of a Landscape Architect/Engineer will be permitted except in case of an emergency, and then only to

such an extent as is absolutely necessary, with the approval of the DPW, and allowable by City Bylaw.

1.04 COMMUNICATIONS

- A. All notices, demands, requests, instructions, approvals, proposals, and claims must be in writing and must be presented to the Engineer in person or by mail to the Owner.
- B. Any notice to or demand upon the Contractor shall be considered sufficiently given if delivered at the office or field office of the Contractor stated on the signature page of the Agreement (or at such other office as the Contractor may from time to time designate in writing to the Owner), or if deposited in the United States mail in a sealed, postage-prepaid envelope, or delivered via email, in each case addressed to such office.
- C. All papers required to be delivered to the Owner shall be hand delivered to the City of Leominster Mayor's Office, located at 25 West Street, Leominster, MA 01453, with a duplicate copy of all payment and change order requests delivered to the Landscape Architect either by hand, United States mail or email. Any notice to or demand upon the Owner shall be sufficiently given is so delivered, or if deposited in the United States mail in a sealed, postage-prepaid envelope, or delivered via email, or to such other representatives of the Owner or to such other address as the Owner may subsequently specify in writing to the Contractor for such purpose.
- D. Any such notice shall be deemed to have been given as of the time of actual delivery or (in case of mailing) when the same should have been received in due course of post, or in the case of emails, at the time of actual receipt.

1.05 LAYOUT WORK

- A. Dimensional layout work shown on Drawings for existing construction is based upon best available information from existing drawings and field measurements. The Contractor is hereby required to verify the layouts from referenced fixed elements such as existing exterior walls and other points which serve as reference points of layout work. The Contractor shall, upon start-up of his work to a point wherein the uncovering of such fixed reference elements will allow, prepare a set of reproducible layout drawings with accurate field dimensions annotated thereon. Carefully verify Contract Drawing layout feasibility. The Contractor shall report to the Engineer and Owner any conditions which are found to conflict with Contract Documents. The Owner will advance decisions as to necessary adjustment to dimensions and revised drawings and/or corrections will be disseminated which shall serve as the basis for advancement of the work.
- B. Lines and grade work in accordance with Drawings and Specifications shall be laid out by a registered Civil Engineer or Surveyor employed by the Contractor. The Contractor shall maintain all established bounds and benchmarks and replace, as directed, any which may be disturbed or destroyed. The selection of the registered Civil Engineer or Surveyor shall be subject to the Owner's approval. The General Contractor shall pay all costs of the services of Civil Engineer or Surveyor.

- C. The Contractor shall check all Drawings and shall report any errors in them to the Landscape Architect and Engineer, who will make or approve the necessary corrections. Any discrepancies not reported prior to construction shall not be the basis for claims for extra compensation.
- D. The Contractor is responsible for meeting the following ADA construction tolerances:
 - 1. Final graded surface of all pedestrian pavement areas is to comply to Federal ADA accessibility regulations with a maximum allowed running slope of 5% and a maximum allowed cross slope of 2%. The Contractor shall be responsible for demonstrating adherence to these regulations at the time of final acceptance and prior to contract completion and final payment.
 - 2. Final graded surfaces of all vehicular pavement areas designated for ADA accessibility on the contract drawings are to comply to Federal ADA accessibility regulations with a maximum allowed running slope of 5% and maximum allowed cross slope of 2%.
 - 3. All paved surfaces are to have a minimum of 1% cross slope on all finished surfaces, which should be pitched to drain as shown on contract drawings.

1.06 PARTIAL USE OF SITE IMPROVEMENTS

- A. The Owner, at its election, may give notice to the Contractor and place in use those sections of the improvements which have been completed, inspected and can be accepted as complying with the Technical Specifications and if, in its opinion, each such section is reasonably safe, fit and convenient for the use and accommodation for which it was intended, provided:
 - 1. The use of such sections of the improvements shall in no way impede the completion of the remainder of the work by the Contractor.
 - 2. The Contractor shall not be responsible for any damages or maintenance costs due directly to the use of such sections.
 - 3. The use of such sections shall in no way relieve the Contractor of his liability due to having used defective materials or due to poor workmanship.
 - 4. The period of guarantee stipulated in the specifications shall not begin to run until the date of the final acceptance of all work which the Contractor is required to construct under this Contract.

1.07 HISTORICAL, ARCHAEOLOGICAL OR ANTIQUE ITEMS

- A. The Contractor during his excavation, site clearance and other operations may come upon, uncover or otherwise discover items of historical, archaeological or antique nature. The Contractor shall immediately stop operations at the particular site of the discovery and notify the Owner so that a proper evaluation may be made of its importance. The

Owner shall arrange for the evaluation in a manner that shall not unduly interfere with the Contractor's operations.

- B. All such items, if designated by competent authority to be historical, archaeological, or antique in nature shall not become the property of the Contractor but shall be placed in the custody of the Owner for disposition.
- C. The Contractor shall be required to remove with care or to assist in the removal of any such item or items and to transport the same to a place of safe keeping within the City of Leominster. The costs for so assisting shall be reimbursed to the Contractor if approved by the Owner.

1.08 FIRE PROTECTION AND PREVENTION

- A. The Contractor shall keep the site free of rubbish and construction debris at all times.
 - 1. He shall provide sufficient metal barrels or dumpsters into which all refuse and garbage shall be deposited. All containers shall have tight fitting covers. These shall be secured overnight or removed daily.
 - 2. At the end of each work day, the Contractor shall thoroughly clean premises of rubbish and debris of any nature, and remove such from the premises.

1.09 RUBBISH REMOVAL

- A. The Contractor and each Subcontractor shall remove all rubbish, waste, tools, equipment, and appurtenances caused by and used in the execution of his work; but this shall in no way be construed to relieve the Contractor of his primary responsibility for maintaining the site clean and free of debris, leaving all work in a clean condition.

1.10 SITE MAINTENANCE

- A. During the full period of construction the contractor shall be responsible for all routine maintenance responsibilities within the designated limits of work for the project, including regular mowing of lawns, tracking pad installation, maintenance and removal, watering as required during drought periods, and litter collection and removal on at least a weekly basis.
- B. Contractor shall take special care to maintain the unobstructed pedestrian access along adjacent sidewalks as designated and required herein and on the plans. Contractor shall keep pedestrian access zones free of debris and water. Temporary obstruction of the sidewalks shall be allowed for the express purpose of work associated with the installation of the trail, curb cuts, and site improvements, however that work should be performed in such a manner so as to make the obstruction as minimal as possible.

1.11 RECORD DRAWINGS

- A. The Contractor shall prepare and/or maintain a set of drawings on which shall be recorded accurately, as the work progresses, the actual "as built" locations and

dimensions of all his work, indicating thereon all variations from the Contract Drawings. This record of "as built" conditions shall include the work of all subcontractors and shall be submitted, upon substantial completion but prior to final acceptance of all work, to the Owner. The Contractor shall provide all necessary field change information.

- B. Compiled and plotted as-built survey data will be required for all pedestrian walkways and handicap accessible parking areas to ensure compliance to ADA requirements. Landscape Architect/ Engineer and Owner will review the printed results of the as-built survey data prior to final acceptance and contract completion.
- C. Refer to Section 01 70 00 – EXECUTION AND CLOSEOUT REQUIREMENTS.

1.12 CONSTRUCTION SCHEDULES AND PAYMENT ESTIMATES

- A. The Contractor must submit a construction schedule to the Owner indicating the general sequence of all work under his contract. This schedule must be submitted within 10 days of the date of Contract execution and shall be revised if required to the Satisfaction of the Owner.
- B. Within 7 days after date of Owner/Contractor Agreement, the Contractor shall submit to the Engineer, Landscape Architect and the Owner a Schedule of Values in duplicate of the various portions of the work including quantities when requested, aggregating the total contract sum, and divided so as to facilitate payments for work under each section. The schedule shall be prepared in such form as specified or as the Landscape Architect or the Owner may approve, and it shall include data to substantiate its accuracy. Each item in the Schedule of Values shall include its proper share of overhead and profit. This schedule requires the approval of the Owner, Engineer and Landscape Architect prior to the Contractor's submitting the first application for payment and shall be used only as a basis for the Contractor's requests for payment.
- C. The established breakdown of items, categories and values shall be utilized to prepare the monthly pay requisition forms. It is recommended that the Contractor submit a draft pay requisition to the Landscape Architect and Engineer for approval, the last week of every month. The Landscape Architect and Engineer shall review and edit this copy to indicate the amount of payment to be approved and return this to the Contractor after field review. The Contractor shall then submit formal five (5) copies of the pay requisition, conforming to the Landscape Architect's approval, for payment by the Owner.

1.13 UTILITIES

- A. The Contractor shall obtain and pay for all licenses and/or permits which are required by the City of Leominster or any other agencies which may be involved; he shall comply with all codes, regulations and standards of the City of Leominster.
- B. The City of Leominster and all private companies or any agencies whose utilities are in the construction area shall be notified by the Contractor at least 48 hours prior to the start of any excavation. The Contractor will be required to cooperate with the utility companies involved in order to assure completion of all work with the least amount of delay.

1.14 SHOP AND WORK DRAWINGS

- A. If it is the intent of the Contractor to furnish and install appurtenances and elements as specified and detailed on the plans, and where shop drawings are requested, a letter to the Owner indicating that these will be ordered and installed as specified shall suffice. In the instance of any discrepancies in the plans and the actual dimensions or size of materials, the Contractor shall be responsible to make any and all adjustments necessary to install the materials as set forth in the Contract Documents.
- B. The Contractor shall furnish one (1) electronic copy of any shop drawings which may be required.
- C. The Contractor shall be responsible for the prompt submission of all shop working drawings so that there will be no delay in the work.
- D. The Approval of shop and working drawings will be general and shall not relieve the Contractor from the responsibility for coordinating all details of design, dimensions, etc., necessary for fittings and construction of the work and with all other construction work as required by the Contract and to ensure the safety of the public.
- E. Refer to Section 01 33 00 – SUBMITTAL PROCEDURES.

1.15 PROVISIONS FOR TRAFFIC

- A. The Contractor shall not close or obstruct any portion of a street without obtaining permits therefore from the proper municipal authorities. If any street or private way shall be rendered unsafe by the Contractor's operations, he shall make such repairs or provide such temporary ways or guards as shall be acceptable to the Owner.
- B. Streets, roads, private ways, and walks shall be maintained passable by the Contractor at his expense, and the Contractor shall assume full responsibility for the adequacy and safety of provisions made including temporary safety and recreational signage. He shall conduct his construction operations such that interference with the flow of traffic will be held to a minimum.
- C. The Contractor shall cooperate in every way possible with the municipal authorities maintaining a flow of traffic through the site. The Contractor shall notify the Leominster Fire and Police Departments when any street is to be closed regardless of the length of time or time of day.
- D. All detours shall be signed and lighted as directed by the Owner.

1.16 SAMPLING AND TESTING OF MATERIALS AND COMPACTION

- A. All sampling and tests ordered by the Owner to ensure that the materials are as specified and that compaction of all materials conforms to the necessary requirements shall be taken and completed by representatives of a Massachusetts certified testing laboratory satisfactory to the Owner and shall be paid for by the Contractor regardless of his results.

These Special Conditions shall take precedence over any technical specifications included herein.

1.17 PROTECTION OF EXISTING STRUCTURES

- A. All existing walks, pipes, conduits, poles, fences, curbs, walls, trees and other structures which are to remain in place shall be carefully supported and protected from injury by the Contractor without additional compensation and in case of injury they shall be restored by him without compensation therefore to as good condition as that in which they were found. The value of any trees damaged shall be determined in accordance with established practices of the American Nursery and Landscape Association or a Registered or Certified Arborist selected by the Landscape Architect. Limits of liability shall not be limited to the replacement with new and immature trees.
- B. The Contractor shall, at his own expense, provide suitable and safe bridges and other crossings, where required for accommodation of travel and to provide access to private property during construction, and shall remove said structures thereafter.
- C. Utility lines shown are located from the best information available. Services may not be shown. The existence of utilities which are normally located in the streets and not shown on the plans shall not be considered as an unusual obstacle, and the Contractor shall not be entitled to extra compensation for maintaining, protecting, or restoring utilities which he disturbs.

1.18 AMEND ITEM 62 "CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT" BY ADDING THE FOLLOWING:

- (h) All pertinent rules and regulations issued under and pursuant to the National Environmental Policy Act of 1969 as amended (P.L. 90-190) (42 USC 4321); the National Historic Preservation Act of 1966 (80 Stat. 915, 16 USC 470); the Wild and Scenic Rivers Act P.L. 90-542 as amended, and Executive Order No 11593 of May 31, 1971.
- (i) Flood insurance requirements, pursuant to the Flood Disaster Protection Act of 1973 (P.L. 93-234, 87 Stat. 975), as amended, and any regulations issued there under by the U.S. Department of Housing and Urban Development and/or the Economic Development Administration.
- (j) Parts 3, 5 and 5a, Subtitle A, Title 29, Code of Federal Regulations, as amended, which shall be applicable to every invitation for bids and to every negotiation, request for proposals, or request for quotations, for a construction contract and to every such contract entered into on the basis of such invitation or negotiation. Part 5a 3, Subtitle A., Title 29, Code Federal Regulations shall constitute the conditions of each contract in excess of \$10,000, and each Grantee and contractor shall include these conditions or provide for their inclusion, in each such contract. Parts 5a. 4 5a. 5, 5a. 6 and 5a. 7 shall also be included in each such contract for the information of the contractor. Apprentices and trainees shall be hired in accordance with the requirements of Part 5a. It should be noted that the entire language of the Federal Clean Air Act is not included in this specification.

1.19 SPECIAL REQUIREMENTS

- A. Construction Management Plan: Prior to commencing any construction the contractor shall have submitted and received approval from the Owner for a Construction Management Plan that outlines construction operation procedures including but not limited to site access, mobilization, site construction fencing, tree protection fencing, tracking pad and erosion control silt fencing, temporary construction lay down and storage, employee parking, temporary toilet provisions, temporary water sources, traffic controls and police details. See Section 01 41 26.
- B. Prior to start of construction the Contractor shall provide a detailed 24/7 project contact list including personnel names, cell phone telephone numbers.

1.20 PHOTOGRAPHS OF PROJECT AREA

- A. Prior to the beginning of work the Contractor shall take color photographs at locations approved by the Owner.
- B. On the last workday of each week, for the duration of the contract, the Contractor shall take additional photographs from essentially the same location as the original photographs to demonstrate the progress of work.
- C. On the back of each hard copy print, note the date on which it was taken, the title of the project, the project number, the name of the Owner, the name of the General Contractor, and the identification of the location of the photograph. Submit one (1) copy of each 8 x 10 hard copy print and one (1) digital copy of each print to the Owner as directed herein. Copies sent to Owner may be emailed as directed herein as well. All digitally sent files should have an accompanying file name identification list containing all of the information required for all hard copy prints and referencing the file name of each digital photo for identification.

END OF SECTION

SECTION 01 30 00
FIELD ENGINEERING AND PROCEDURAL REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Coordination
- B. Field engineering
- C. Alteration project procedures
- D. Cutting and patching
- E. Preconstruction conference
- F. Progress meetings

1.02 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements.
- B. Verify that utility requirement characteristics of operating equipment are compatible with existing utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate space requirements and installation of mechanical work which are indicated diagrammatically on Drawings. Follow routing shown as closely as practicable. Utilize spaces efficiently to maximize accessibility for other installations for maintenance, and for repairs.
- D. In finished areas (except as otherwise indicated), conceal pipes within the construction.
- E. Coordinate completion and cleanup of work of separate sections in preparation for Substantial Completion.
- F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.03 FIELD ENGINEERING

- A. The Contractor shall engage the services of a Professional Engineer or Land Surveyor registered in the Commonwealth of Massachusetts and shall submit the name, address, and registration number of such person or persons to the Owner, Landscape Architect and Engineer in writing.

- B. Whenever reference is made on the plans or on these specifications to a Land Surveyor registered in the Commonwealth of Massachusetts the Contractor may substitute a Registered Professional Engineer, except that only a registered Land Surveyor will be permitted to conduct property line or boundary surveys.
- C. Contractor to locate and protect survey control and reference points.
- D. Control datum for survey is that established by Owner provided survey shown on Drawings.
- E. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.

1.05 ALTERATION PROJECT PROCEDURES

- A. Materials: As specified in product Sections; match existing products and work for patching and extending work.
- B. Close openings in exterior surfaces to protect existing work from weather and extreme temperature and humidity.
- C. Remove, cut and patch work in a manner to minimize damage and to provide a means of restoring products and finishes to specified condition.
- D. Refinish visible existing surfaces to remain to specified conditions for each material, with a neat transition to adjacent finishes.
- E. Where new work abuts or aligns with existing, perform a smooth and even transition. Patched work to match existing adjacent work in texture and appearance.
- F. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Engineer for review.
- G. Where a change of plane of 1/4 inch (6mm) or more occurs, submit recommendation for providing a smooth transition for Engineer review.
- H. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- I. Finish surfaces as specified in individual project Section.
- J. The Contractor is responsible for meeting the following ADA construction tolerances:
 - 1. Final graded surface of all pedestrian pavement areas is to comply to Federal ADA accessibility regulations with a maximum allowed running slope of 5% and a maximum allowed cross slope of 2%. The Contractor shall be responsible for

demonstrating adherence to these regulations at the time of final acceptance and prior to contract completion and final payment.

2. Final graded surfaces of all vehicular pavement areas designated for ADA accessibility on the contract drawings are to comply to Federal ADA accessibility regulations with a maximum allowed running slope of 5% and maximum allowed cross slope of 2%.
3. All paved surfaces are to have a minimum of 1% cross slope on all finished surfaces, which should be pitched to drain as shown on contract drawings.

1.06 CUTTING AND PATCHING

- A. Employ skilled and experienced installer to perform cutting and patching.
- B. Execute cutting, fitting, patching including excavation and fill to complete work and to:
 1. Fit the several parts together, to integrate with other work.
 2. Uncover work to install or correct ill-timed work.
 3. Remove and replace defective and non-conforming work.
 4. Provide openings in elements of work for penetrations of mechanical and electrical work.
- C. Execute work by methods which will avoid damage to other work, and provide proper surfaces to receive patching and finishing.
- D. Cut rigid materials using masonry saw or core drill.
- E. Restore work with new products in accordance with requirements of Contract Documents.
- F. Fit work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- G. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection.

1.07 PRE-CONSTRUCTION CONFERENCE

- A. Owner will schedule a conference after Notice of Award.
- B. Attendance Required: Owner, Landscape Architect, Engineer, and Contractor.
- C. Agenda:
 1. Distribution of Contract Documents;

2. Submission by Contractor of list of Subcontractors, list of products, Schedules of Values, and progress schedule;
3. Designation of personnel representing the parties in Contract, the Landscape Architect, and the Engineer;
4. Procedures and processing of field decisions, submittals, substitutions, applications for payment, proposal request, Change Orders and Contract closeout procedures;
5. Scheduling

1.08 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at maximum weekly intervals.
- B. Attendance Required: Job superintendent, subcontractors and suppliers as requested, Owner, and Landscape Architect/Engineer as appropriate to agenda topics for each meeting.
- C. Agenda:
 1. Review minutes of previous meetings;
 2. Review of Work progress;
 3. Field observations, problems and decisions;
 4. Identification of problems which impede planned progress;
 5. Review of submittals schedule and statuses of submittals;
 6. Maintenance of progress schedule;
 7. Correcting measures to regain projected schedules;
 8. Planned progress during succeeding work period;
 9. Coordination of projected progress;
 10. Maintenance of quality and work standards;
 11. Effect of proposed changes on progress schedules and coordination;
 12. Other business relating to Work.

PART 2 - MATERIALS

NONE

PART 3 - EXECUTION

3.01 LAYOUT

- A. The Contractor shall use the alignments shown on the plans to obtain the alignment which shall be reviewed subject to field adjustments as ordered by the Engineer.
- B. The Surveyor shall layout the necessary grades and locations of footings, drain structures, drain lines, and other proposed elements and shall verify the location of any existing spikes, stakes, pipes, drill holes, etc., and shall be responsible for their accuracy. Proposed site improvements shall be located in relation to dimensions shown on the drawings.
- C. The Contractor shall inform the Landscape Architect and Engineer when the general layout is completed and shall not begin excavation until the various alignments are reviewed by the Landscape Architect and Engineer. Any discrepancies encountered in field conditions shall be reported to the Owner, Landscape Architect and Engineer immediately.
- D. The Contractor shall be responsible for maintaining the correct vertical and horizontal alignment of all elements, which responsibility shall not be waived by the Landscape Architect or Engineer's review of basic layout and stakeout.

END OF SECTION

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Submittal procedures
- B. Construction progress schedules
- C. Proposed products list
- D. Shop drawings
- E. Product data
- F. Samples
- G. Manufacturers' instructions
- H. Manufacturers' certificates
- I. Construction photographs

1.02 RELATED SECTIONS

- A. Section 01 20 00 – PRICE AND PAYMENT PROCEDURES: Schedule of Values.
- B. Section 01 41 26 – PERMIT REQUIREMENTS.
- B. Section 01 45 00 – QUALITY CONTROL: Manufacturers' field services and reports.
- C. Section 01 70 00 – EXECUTION AND CLOSEOUT REQUIREMENTS: Contract warranty, manufacturer's certificates, and closeout submittals.

1.03 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Landscape Architect or Engineer accepted form (see sample at end of this section).
- B. Sequentially number the transmittal forms. Re-submittals to have original number with an alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), and specification Section number, as appropriate.

- D. Apply Contractor's stamp, signed or initials certifying that review, verification of Products required, field dimensions, adjacent construction work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.
 - E. Schedule submittals to expedite the Project, and deliver to Landscape Architect/Engineer at business address. Coordinate submission of related items.
 - F. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed work.
 - G. Provide space for Contractor and Landscape Architect or Engineer review stamps (see sample at end of this section).
 - H. Revise and resubmit submittals as required, identify all changes made since previous submittal.
 - I. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.
 - J. Utilize submittal forms as provided (see sample at end of this section) or as agreed upon by Landscape Architect/Engineer.
 - K. Refer to sample review/approval form (see sample at end of this section) or as agreed upon by Landscape Architect/Engineer.
- 1.04 CONSTRUCTION MANAGEMENT PLAN
- A. See Section 01 41 26 – PERMIT REQUIREMENTS.
- 1.05 CONSTRUCTION PROGRESS SCHEDULES
- A. Submit initial progress schedule in duplicate within 10 days after date of Owner-Contractor Agreement for Landscape Architect/Engineer review.
 - B. Revise and resubmit as required.
 - C. Submit a horizontal bar chart with separate line for each major section of work or operation, identifying first work day of each week.
 - D. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.
 - E. Indicate estimated percentage of completion for each item of Work at each submission.
 - F. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates.
- 1.06 PROPOSED PRODUCT LIST

- A. Within 15 days after date of Notice to Proceed, submit complete list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.07 SHOP DRAWINGS

- A. Submit in accordance with the general conditions of this Contract.
- B. After review, reproduce and distribute in accordance with Articles on Procedures above and for Record Documents described in Section 01 70 00 – EXECUTION AND CLOSEOUT REQUIREMENTS.

1.08 PRODUCT DATA

- A. Shop drawings, product data, and sample submissions shall clearly identify by note, mark, or labels the Specification paragraph(s) applicable to each product.
- B. Shop drawings shall be submitted by the Contractor only, to Landscape Architect and Engineer, in form of photocopied or original printed computer assisted or hand produced drawings, or emailed PDF of hand or computer assisted drawings accompanied by an appropriate transmittal form. Each shop drawing shall be thoroughly checked by the Contractor for accuracy and conformity with the Contract requirements prior to submittal, and certification must appear on each shop drawing that the Contractor has made such a check. References on shop drawings to other trade(s) shall designate such trade(s) and the term "by others" shall not be used.
- C. Submit in accordance with the special conditions of the Contract.
- D. The Landscape Architect's or Engineer's criticisms and comments shall be made on the original which shall be returned to the Contractor, if necessary, who shall then make the necessary corrections on the original drawings and resubmit photocopied or original printed computer assisted or hand produced corrected drawings, or emailed PDF of hand or computer assisted corrected drawings.
- E. After review, reproduce and distribute in accordance with Articles on Procedures above and for the Record Documents described in Section 01 70 00 – EXECUTION AND CLOSEOUT REQUIREMENTS.
- F. Drawings returned "approved" and/or "approved as noted, resubmission not required" as set forth below: Contractor shall obtain and distribute adequate prints for construction, including one print of each for the Owner's project representative, and then return the drawings to the subcontractor or supplier from whom they were originally received.
- G. Drawings returned "resubmit" or "disapproved", as set forth below: Contractor shall obtain and distribute adequate prints for construction, including one print of each for the

Owner's project representative, and then return the drawings to the subcontractor or supplier from whom they were originally received.

H. Each drawing shall have a title block on the right hand side containing the following data:

Name of project
Landscape Architect
Engineer
Contractor
Subcontractor or Supplier
Date of Submission

I. Each drawing shall have a clear space on the right hand side for approval stamps of both the Landscape Architect, Engineer, and Contractor. The Landscape Architect shall insert the date of action taken and an identification of the person taking the action.

J. Shop Drawing Grading:

1. APPROVED: No corrections, no marks.
2. APPROVED AS NOTED: Resubmission not required. Minor amounts of corrections; all items can be fabricated without further corrections to original drawing; checking is complete and all corrections are deemed obvious without ambiguity.
3. APPROVED AS NOTED: Resubmission required. Minor amounts of corrections; noted items must not be fabricated without further corrections of original drawing; checking is not complete; details of items noted by checker are to be clarified further before full approval can be given. Submit new drawings.
4. DISAPPROVED: Drawing is rejected as not in accord with the Contract, too many corrections, or other justifiable reasons. When returning drawing, Landscape Architect will state reasons for rejection. Correct and resubmit. Do not fabricate.

K. The Contractor shall be fully responsible for delay in the delivery of materials or progress of work caused by late approval of shop drawings due to failure of the Contractor to submit, revise, or resubmit shop drawings in adequate time to allow the Landscape Architect and Engineer reasonable time (up to two (2) weeks) for normal checking and processing of each submission or re-submission.

1.09 PRODUCT DATA

A. Product data shall be submitted to Landscape Architect and Engineer in packets of four (4) copies each for distribution and filing as the Landscape Architect/Engineer may prescribe, accompanied by an appropriate transmittal form. Product data shall include complete specifications, performance data, certified laboratory test report data, installation instructions, health and safety precautions, and maintenance instructions, and shall show illustrated capacities, characteristics, wiring diagrams, controls, and other

pertinent information for complete product and product use description. If more than one size or type is shown on any printed sheet, indicate clearly intended item(s).

- B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturer's standard data to provide information unique to this project.
- C. After review, reproduce and distribute in accordance with Articles on Procedures above and for the Record Documents described in Section 01 70 00 – EXECUTION AND CLOSEOUT REQUIREMENTS.
 - 1. Contractor shall submit sufficient copies for all other parties. No "Disapproved" or "Resubmit" copies shall be sent to the job site.

1.10 SAMPLES

- A. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- B. Submit samples of finishes, colors, textures, and patterns for Landscape Architect's selection. Samples shall be clearly labeled as to its material, type or make, manufacturer, size or gauge, and other pertinent data.
- C. Include identification on each sample, with full Project information accompanied by an appropriate transmittal form.
- D. Submit the number or samples specified in individual specification Sections; one of which will be retained by Landscape Architect.
- E. Reviewed samples which may be used in the Work are indicated in individual specification Sections.

1.11 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification Sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, finishing, and maintenance in quantities specified for Product Data.
- B. Identify conflicts between manufacturers' instructions and Contract Documents and notify Landscape Architect/Engineer in writing of such conflicts prior to fabrication, construction or application of the particular item.

1.12 MANUFACTURER'S CERTIFICATES

- A. When specified in individual specification Sections, submit manufacturers' certificate to Landscape Architect and Engineer for review, in quantities specified for Product Data.
- B. Indicate material or product that conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Landscape Architect and Engineer.

1.13 CONSTRUCTION PHOTOGRAPHS

- A. Each week submit photographs to the Owner, Landscape Architect and Engineer as required under Section 00 73 00 – SUPPLEMENTARY CONDITIONS.

1.14 EMERGENCY ADDRESSES

- A. The Contractor shall submit to the Owner, Landscape Architect and Engineer, in writing, the name, addresses and telephone numbers of key members of their organization to be contacted in the event of an out-of-hours emergency at the site.

1.15 PERMITS AND LICENSES

- A. The Contractor shall comply with all requirements of permit and licenses issued by cognizant Federal, State, and local agencies.

1.16 UTILITY NOTIFICATION

- A. The Contractor shall notify in writing all utilities located on the project site to request confirmation of all utility locations, depths and sizes. Contractor shall record contact name, telephone number and date of correspondence with each utility company. The Contractor shall submit to the Owner and the Engineer written notification forms to each utility and written response from each utility.

1.17 SAMPLE SUBMITTAL FORMS

Date: _____

Project: _____

Dear Sir or Madam:

The following shop drawings, catalog cuts, and/or manufacturer's specifications are submitted for your review to permit incorporation of the products into the work. These have been prepared by this office or received from manufacturers or installers in accordance with the contract.

We have checked and approved the submitted information and certify that it complies with the intent of the contract documents, has been field verified, and meets necessary construction criteria. Any deviation from the requirements of the contract documents is stated below.

List of Submittals

Specification Page or Item

Deviations from Contract Requirements:

Very truly yours,

Contractor's Signature _____
Name _____
Title _____

1.18 SAMPLE REVIEW/APPROVAL FORM

APPROVED

APPROVED AS NOTED

Resubmission (is) required
(is not) required

DISAPPROVED

Checked by:

Date:

The Landscape Architect's approval of this is only for conformance with the design concept of the Project and compliance with the information given in the Contract to be confirmed and correlated to the job site; for quantities; for information that pertains solely to the fabrication processes or to techniques of Construction; and for the coordination of the work of all trades. This approval shall not relieve the Contractor from responsibility for deviations from drawings or specifications or errors to shop drawings or schedules.

END OF SECTION

SECTION 01 41 26
CONSTRUCTION MANAGEMENT PLAN

PART 1 - GENERAL

1.01 GENERAL

- A. Project Contractors shall adhere to all permit and license requirements established in the design review process.

1.02 OTHER APPROVALS, PERMITS AND LICENSES

- A. In addition, the contractors shall confirm approvals of the following permit requests currently in progress prior to startup of construction and adhere to their requirements:

1. Local Municipality approvals.
2. Local Municipality curb cut application.
3. Any additional agency approvals and permits will be identified by Owner prior to startup of construction.

- E. The Contractor shall procure all required permits and licenses, pay all charges, fees and taxes, and shall give all notices necessary and incidental to the due and lawful prosecution of work under this contract. The cost thereof shall be included in the prices bid for the various items listed in the proposal. Copies of all required permits shall be filed with the Owner, Landscape Architect and Engineer prior to the beginning of work.

- F. Contractor to prepare a Construction Management Plan (see also Section 02 00 00) to be reviewed and approved by the Owner prior to submittal to the Local Municipality Transportation Department. The Construction Management Plan should include but is not limited to the following:

1. Off-Site and On-Site Staging areas.
2. Access across the public Right of Way.
3. Extent and schedule of sidewalk closing.
4. Extent and schedule of Park entry closing.
5. Off-Site Parking.
6. Power supply location/description.
7. Water supply location/description.
8. Erosion Control barrier plan.

9. Tree Protection fencing locations.
10. Site Construction fencing plan.

END OF SECTION

SECTION 01 42 13
TECHNICAL ABBREVIATIONS AND ACRONYMS

PART 1 - GENERAL

1.01 ABBREVIATIONS OF ORGANIZATIONS AND STANDARDS

- A. Certain organizations, codes, and standards have been abbreviated in the Contract Documents for convenience and are to be interpreted in accordance with the following list. Abbreviations not listed below may be referred to the Landscape Architect for interpretation.

AA	Aluminum Association
AAMA	Architectural Aluminum Manufacturer's Association
ACI	American Concrete Institute
AGA	American Gas Association
ACG	American General Contractors
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
ANLA	American Nursery and Landscape Association
ANSI	American National Standards Institute
APA	American Plywood Association
ASAHC	American Society of Architectural Hardware Consultants
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning
ASTM	American Society of Testing and Materials
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers' Association
AWS	American Welding Society
CPSC	Consumer Products Safety Commission
CS	Commercial Standards, U.S. Department of Commerce
FGMA	Flat Glass Marketing Association
FM	Factory Mutual
Fed. Spec. or FS	Federal Specifications
IS	Industry Standard, U.S. Department of Commerce
NAAMM	National Association of Architectural Metal Manufacturers
NAHM	National Association of Hardware Manufacturers
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Association of Hardware Manufacturers
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
PS	Products Standards, U.S. Department of Commerce
SDI	Steel Deck Institute
SJI	Steel Joist Institute
SMACNA	Sheet Metal & Air Conditioning Contractors National Association
TCA	Tile Council of America
UL	Underwriters' Laboratories
WPA	Western Wood Products Association

- B. MassDOT: "Standard Specifications for Highways and Bridges", Massachusetts Department of Transportation (formerly Massachusetts Highway Dept. and Massachusetts Department of Public Works), Commonwealth of Massachusetts, latest edition and all Supplements.

END OF SECTION

SECTION 01 45 00
QUALITY CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

- A. These general requirements apply to all work operations. Refer to other Division specification sections for specific general, product, and execution requirements.

1.02 SECTION INCLUDES

- A. Quality assurance and control of installation
- B. References
- C. Field samples
- D. Inspection and testing laboratory services

1.03 RELATED SECTIONS

- A. Section 01 33 00 – SUBMITTAL PROCEDURES: Submission of Manufacturer's Instructions and Certificates.
- B. Section 01 60 00 – PRODUCT REQUIREMENTS: Requirements for materials and product quality.

1.04 QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply fully with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, notify the Engineer and Landscape Architect.
- D. Perform work by persons qualified to produce workmanship of specified quality.
- E. Comply with specified standards as a minimum quality for the work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- F. The Contractor is responsible for meeting the following ADA construction tolerances:
 - 1. Final graded surface of all pedestrian pavement areas is to comply to Federal ADA accessibility regulations with a maximum allowed longitudinal slope of 5%, or 1 foot Vertical in 20 feet Horizontal, and a maximum allowed cross slope of 2%, or 1 foot

Vertical in 50 feet Horizontal. The Contractor shall be responsible for demonstrating adherence to these regulations at the time of final acceptance and prior to contract completion and final payment.

2. Final graded surfaces of all vehicular pavement areas designated for ADA accessibility on the contract drawings are to comply to Federal ADA accessibility regulations with a maximum allowed longitudinal slope of 5% and maximum allowed cross slope of 2%.
3. All paved surfaces are to have a minimum of 1%, or 1 foot Vertical in 100 feet Horizontal, cross slope on all finished surfaces, which should be pitched to drain as shown on contract drawings.

- G. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.05 REFERENCES

- A. Conform to reference standard by date of issue of Contract Documents.
- B. Obtain copies of standards when required by Contract Documents.

1.06 FIELD SAMPLES

- A. Install field samples at the site as required by individual specification Sections for review.
- B. Acceptable samples represent a quality level for the Work.
- C. Where field samples are specified in individual Sections to be removed, clear area after field sample has been accepted by Landscape Architect.

1.07 INSPECTION AND TESTING LABORATORY SERVICES

- A. Owner will appoint, employ services of an independent firm to perform inspection and testing. Contractor shall be required to pay for all services required.
- B. The independent firm will perform inspections, tests, and other services specified in the individual specification Sections and as required by the Owner.
- C. Reports will be submitted by the independent firm to the Owner, in duplicate indicating observations and results of tests and indicating compliance or non-compliance with the Contract Documents.
- D. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, and provide storage and assistance as required.
 1. Make arrangements with independent firm and pay for additional samples and tests required for contractor's use.

2. Notify Owner and independent firm 24 hours prior to expected time of operations requiring services.
 3. The location for all testing to be performed shall be determined by the Owner. The schedule for all testing shall be approved by the Owner.
- E. Retesting required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Owner. Payment for retesting will be charged to the Contractor.

END OF SECTION

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Temporary Utilities: Electricity, lighting, ventilation, water, and sanitary facilities.
- B. Temporary Controls: Barriers, fencing, water control, enclosures, protection of the Work, and security.
- C. Construction Facilities: Parking, progress cleaning, project and signage.

1.02 RELATED SECTIONS

- A. Section 01 70 00 – EXECUTION AND CLOSEOUT REQUIREMENTS: Final cleaning

1.03 TEMPORARY ELECTRICITY

- A. Provide and pay for power service required from the pertinent local electrical utility company.
- B. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible power cords as required.
- C. Provide main service disconnect and over current protection at convenient location.

1.04 TEMPORARY LIGHTING

- A. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
- B. Maintain lighting and provide routine repairs.
- C. Maintain existing lighting along all sidewalk and roadway edges until new lights are installed and operational.

1.05 TEMPORARY WATER SERVICE

- A. Connect to existing water source for construction operations.
- B. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.
- C. Obtain necessary permits from the local municipality; pay all costs of permit and water used during term of contract.

1.06 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Existing facilities shall not be used.

1.07 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide protection for plants designated to remain. Replace damaged plants.
- C. Protect non-owned vehicular traffic, stored materials, site and structures from damage.

1.08 FENCING

- A. As required by other contract requirements.
- B. Contractor shall erect 6'-0" ht. Chain Link temporary fence and install safety controls prior to commencement of site work.
- C. Add securely attached signs which say, "Construction Zone-No Trespassing" at 50'-0" intervals along fence.

1.09 WATER CONTROL

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

1.10 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification Sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to minimize damage.
- C. Provide protective coverings at walls, projections and openings.
- D. Protect surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

1.11 SECURITY

- A. Provide security and facilities to protect Work and existing facilities from unauthorized entry, or damage, including graffiti, vandalism, or theft.

- B. As part of the project scope, provide police details to maintain pedestrian and vehicular safety and in order to ensure construction access control.

1.12 PARKING AND SITE ACCESS

- A. Arrange for temporary off-site parking to accommodate construction personnel.
- B. Contractor shall coordinate site access with City's Engineering Department.

1.13 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove water materials, debris, and rubbish from site weekly and dispose off-site.

1.14 PROJECT IDENTIFICATION

- A. Provide two (2) Project Identification signs to be located where directed by Owner and Landscape Architect, as depicted herein. The sign layout shall be as the following: (provide a shop drawing to Owner and Landscape Architect for review of sign and text layout.):

TWIN CITIES RAIL TRAIL: PHASE 3

City of Leominster
Dean Mazzarella, Mayor

Department of Public Works

Nicholas Kremp
Conservation Agent, Department Of Conservation

Landscape Architect

Brown, Richardson + Rowe, Inc.
Boston, MA

General Contractor

Company Name
City, State

Engineer

Stantec
Burlington, MA



Funding for this project generously provided by:

GATEWAY CITY PARKS PROGRAM

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs

CITY OF LEOMINSTER



- B. Signs shall be made of durable, exterior grade painted plywood or metal securely mounted to wood posts, be of the sizes indicated on the accompanying plans and be professionally lettered as shown on the Drawings herein. Submit samples of color and lettering layouts to Landscape Architect for approval.
- C. Signs shall be securely mounted with galvanized metal attachments to wood or steel posts and shall be framed so as to be durable. All attachments and mountings shall be child safe and vandal resistant.
- D. Signs shall be installed facing the street or access points to the construction area so as to be visible and to inform the general public. Where possible, the signs should be located so as not to conflict with the construction process.
- E. The construction signs shall be maintained in satisfactory condition during construction and then removed and disposed of legally by the contractor just prior to the final acceptance of the work.
- F. As directed, permanent signs shall be installed and protected until project acceptance.

- G. Remove all signs at Substantial Completion and dispose of or deliver to storage area as directed by Owner.
- H. No other temporary signs are allowed without Owner's permission except those required by law.

1.15 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary above grade or buried utilities, equipment, facilities, materials, prior to Final Application for Payment inspection.
- B. Remove underground installations to a minimum depth of 2 feet (600 mm). Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Products
- B. Transportation and handling
- C. Storage and protection
- D. Product options
- E. Substitutions

1.02 RELATED SECTIONS

- A. Section 01 45 00 - QUALITY CONTROL: Product quality monitoring.

1.03 PRODUCTS

- A. Products: means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- C. Provide interchangeable components of the same manufacturer, for similar components.

1.04 TRANSPORTATION AND HANDLING

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.05 STORAGE AND PROTECTION

- A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate-controlled enclosures.

- B. For exterior storage of fabricated products, place on sloped supports, above ground.
- C. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- D. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- E. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

1.06 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

1.07 SUBSTITUTIONS

- A. Owner will consider requests for substitutions only within 20 days after date of Owner-Contractor Agreement.
- B. Substitution may be considered when a product becomes unavailable through no fault of the contractor.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- D. A request constitutes a representation that the Contractor:
 - 1. Has investigated the proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Will provide the same warranty for the substitution as for the specified product.
 - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be completed with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

F. Substitution Submittal Procedure:

1. Submit three copies of requests for Substitution for consideration. Limit each request to one proposed Substitution.
2. Submit shop drawings, product data and certified test results attesting to the proposed product equivalence.
3. The Landscape Architect/Engineer will notify Contractor, in writing, of decision to accept or reject request.

END OF SECTION

SECTION 01 70 00
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Closeout procedures
- B. Final cleaning
- C. Adjusting
- D. Project record documents
- E. Warranties
- F. Spare parts and maintenance materials
- G. Materials and Maintenance Manual

1.02 RELATED SECTIONS

- A. Section 01 50 00 – TEMPORARY FACILITIES AND CONTROLS: Progress cleaning.

1.03 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents.
- B. Provide submittals to Owner, Landscape Architect and Engineer that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Owner will occupy all of the site as specified in Section 01 30 00 – ADMINISTRATIVE REQUIREMENTS.

1.04 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean surfaces exposed to view.
- C. Clean equipment and fixtures to a sanitary condition.
- D. Clean site; sweep paved areas, rake clean landscaped surfaces.

- E. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.05 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.06 PROJECT RECORD DOCUMENTS

- A. Pursuant to the GENERAL SPECIFICATIONS, the Contractor shall maintain at the site for the Owner, readily available to Owner and/or Landscape Architect for inspection, one record copy of all Drawings, Specifications, Addenda, Change Orders, and other Modifications, in good order and mark it currently to record all changes made during construction, and approved Shop Drawings, Product Data and Samples. Subcontractors shall be responsible to the Contractor to keep the record documents for their portion of the work marked currently to record all changes in their work made during construction. All the record documents, shop drawings, product data, and samples shall be made available to the Landscape Architect and shall be delivered to them for the Owner upon completion of the work. These record drawings, together with the as-built survey data required (see Specifications Section 00 73 00 – SUPPLEMENTARY CONDITIONS) shall be the basis for the official As-Built plans compiled by the Contractor as required for final acceptance and contract completion (final payment).
- B. Maintain on site, one set of the following record documents; record actual revisions to the Work:
 - 1. Contract Drawings
 - 2. Specifications
 - 3. Addenda
 - 4. Change Orders and other Modifications to the Contract
 - 5. Reviewed shop drawings, product data, and samples.
- C. Store Record Documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
 - 1. Manufacturer's name and product model and number
 - 2. Product substitutions or alternates utilized
 - 3. Changes made by Addenda and Modifications.

- F. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
1. Spot elevations of the constructed, finish elevations.
 - a. Document as-built spot elevations at all drainage structure rims, high points, low points, utility structures, and at all locations where proposed spot elevations are shown on the Drawings.
 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Field changes of dimension and detail.
 4. Details not on original Contract Drawings.
- G. In addition, at the completion of the work, the contractor shall provide a set of marked-up working as-built drawings showing as built changes to the original construction plans to the Owner. Subcontractors shall be responsible to the Contractor for completing their own portions of these record drawings. Additionally, as-built survey data will be required for all paved surfaces and shall be compiled and plotted in a manner as to demonstrate that all built paved areas adhere to the construction tolerances set forth in these Contract Documents including compliance to all Federal ADA regulations for accessibility. Full size hard copy reproductions of all Record Drawings and As-Built Plans shall be made available to the Owner and the Landscape Architect/ Engineer at the Contractor's expense.
- H. Submit documents to Owner, Landscape Architect and Engineer with claim for final Application for Payment.

1.07 WARRANTIES

- A. Provide duplicate notarized copies.
- B. Execute and assemble documents from Subcontractors, suppliers and manufacturers.
- C. Provide Table of Contents and assemble in size D three ring binder with durable plastic cover.
- D. Submit prior to final Application for Payment.
- E. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.08 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification Sections.

- B. Deliver to and place in location as directed. Obtain receipt prior to final payment.

1.09 MATERIALS AND MAINTENANCE MANUAL

- A. The Contractor shall prepare and deliver to the Landscape Architect and Engineer for approval and transmittal to Owner two (2) copies, in hardcover binder, of the project Materials and Maintenance Manual. The manual shall contain full descriptive information, catalog cuts, maintenance instructions, and parts lists for each item identifying materials utilized, hardware and surface preparation, paint finish schedules, and fixtures accessories.
- B. The manual shall also include service, maintenance and cleaning instructions for all manufactured products, finishes, and systems.
- C. Each volume of the manual shall be clearly indexed, and shall include a directory of all Subcontractors, material suppliers, local maintenance organizations, indicating the area of responsibility of each, and the name and telephone number of the responsible member of each organization.
- D. All material shall be bound in order and sequence conforming to the Specification numbering system. Typewritten, drawn or photographic materials shall be protected by clear plastic sleeves.
- E. The manuals shall be submitted at time of substantial completion of the project and initial occupancy by the Owner. The Contractor shall maintain and operate all systems of the project until the approved manuals are transmitted to the Owner and the Owner's personnel are instructed in all operations.

END OF SECTION

PART B

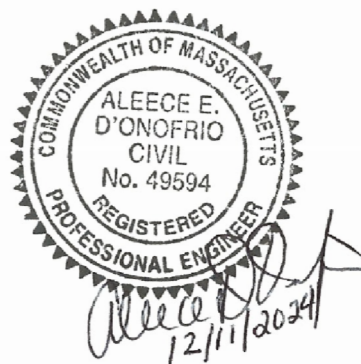


TABLE OF CONTENTS: PART B

NUMBER	TITLE	PAGE NO.
DIVISION 01 – GENERAL REQUIREMENTS		
01 53 00	TEMPORARY CONSTRUCTION	01 53 00-1 thru 01 53 00-8
01 56 39	TREE PROTECTION	01 56 39-1 thru 01 56 39-5
DIVISION 03 – CONCRETE		
03 30 00	CAST IN PLACE CONCRETE	03 30 00-1 thru 03 30 00-15
DIVISION 31 – EARTHWORK		
31 00 00	EARTHWORK	31 00 00-1 thru 31 00 00-14
DIVISION 32 – EXTERIOR IMPROVEMENTS		
32 05 05	SELECTIVE DEMOLITION	32 05 05-1 thru 32 05 05-7
32 10 00	BASES, BALLASTS, AND PAVING	32 10 00-1 thru 32 10 00-6
32 12 10	CONTROL OF INVASIVE PLANTS EXISTING ON SITE	32 12 10-1 thru 32 12 10-7
32 12 20	INVASIVE PLANT MANAGEMENT STRATEGY	32 12 20-1 thru 32 12 20-4
32 16 00	CURBS AND GUTTERS	32 16 00-1 thru 32 16 00-3
32 17 00	PAVING SPECIALTIES	32 17 00-1 thru 32 17 00-8
32 30 00	SITE IMPROVEMENTS	32 30 00-1 thru 32 30 00-21
32 33 00	SITE FURNISHINGS	32 33 00-1 thru 32 33 00-10
32 90 00	PLANTING AND LAWNS	32 90 00-1 thru 32 90 00-34
DIVISION 33 – UTILITIES		
33 40 00	STORMWATER UTILITES	33 40 00-1 thru 33 40 00-2

END OF TABLE OF CONTENTS: PART B

ALL CONTRACT ITEMS

Unless otherwise amended by these Technical Specifications or the Contract Drawings, all work under this Contract shall conform to the requirements of the applicable "Sections" of The Commonwealth of Massachusetts, *Department of Transportation Standard Specifications for Highways and Bridges*, 2024 Edition, the latest "Supplemental Specifications" by MassDOT, the 2017 MassDOT Construction Standard Details, the 2009 *Manual on Uniform Traffic Control Devices (MUTCD)* with Massachusetts Amendments and the Standard Municipal Traffic Code, and any and all amendments or addenda thereto, hereinafter referred to as the "Standard Specifications".

The following items reflect special conditions particular to this Contract. As such, they amend and/or supplement the provisions governing the item as described in the Standard Specifications.

The Contractor's attention is directed to the necessity of making their own investigation in order to assure that no damage to existing structures, drainage lines, traffic signal conduits, etcetera, will occur.

The Contractor shall notify Massachusetts DIG SAFE® and procure a Dig Safe® Number for each location prior to disturbing existing ground in any way. Contact the Dig Safe® Call Center by dialing 811 or 1-888-344-7233 or online at www.digsafe.com.

The Contractor is hereby notified that they are ultimately responsible for constructing all project elements in strict compliance with the current Massachusetts Architectural Access Board (AAB) and Americans with Disabilities Act (ADA) rules, regulations, and standards.

All construction elements in this project associated with sidewalks, walkways, cuts are controlled by 521 CMR - Rules and Regulations of the Architectural Access Board (AAB).

The AAB Rules and Regulations specify maximum slopes and minimum dimensions required for construction acceptance. There is no tolerance allowed for slopes greater than the maximum slope nor for dimensions less than the minimum dimensions.

REFERENCES

Where references are made in these Specifications to standard specifications, codes, etc., of the U.S. Government, State or local authorities, or professional and industrial societies and associations, the applicable portions thereof shall govern as fully as if they were printed in their entirety, herein, and shall include all revisions thereto issued as of the date of the Notice to Contractors pertaining hereto. Comply with the requirements of the following codes and industry standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern. The following references are used herein and shall mean:

MassDOT Standard Specifications: Commonwealth of Massachusetts, Massachusetts Department of Transportation (formerly Massachusetts Highway Department and Department of Public Works), "Standard Specifications for Highways and Bridges," latest edition and including all applicable Supplemental Specifications, Standard Special Provisions and Special Provisions.

Access MassDOT Highway Information related to Construction, Design/Engineering, Contractor/Vendor Information, Approved Materials and Fabricators, Manuals, Publications and Forms at: <https://www.mass.gov/orgs/highway-division>

SECTION 01 53 00
TEMPORARY CONSTRUCTION

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Include the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.
- B. Examine all other Sections of the specifications for requirements which affect Work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under the Contract.
- D. The work shall conform to the relevant provisions of the Commonwealth of Massachusetts Department of Transportation (MassDOT) Standard Specifications 2024 Edition for Highways and Bridges and the Supplemental Specifications.

1.02 SUMMARY

- A. This Section specifies requirements for the following types of work and related items, but is not limited to:
 - 1. Furnishing and installing sediment collection and control devices at the locations shown on the plans and as required by the Engineer.
 - 2. Removing and resetting existing bounds within the limits of work.
 - 3. Furnishing, installing, and maintaining all equipment required by the engineer within a satisfactory office space as specified herein.
 - 4. Mobilization
 - 5. Preparation and implementation of a Storm Water Pollution Prevention Plan.

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. The following related work is to be performed under the designated SECTIONS:
 - 1. Section 01 56 39 – TREE PROTECTION

PART 2 – PRODUCTS

2.01 SILT SACK

- A. The sediment collection sack (silt sack) shall be manufactured from a woven polypropylene fabric with an oil-absorbent pillow insert or made completely from an oil-absorbent fabric with a woven pillow insert that meets or exceeds the following specifications.

<u>Properties</u>	<u>Test Method</u>	<u>Units</u>
Grab Tensile Strength	ASTM D-4362	265 LBS
Grab Tensile Elongation	ASTM D-4362	20%
Puncture	ASTM D-4833	135 LBS
Mullen Burst	ASTM D-3786	420 LBS
Trapezoid Tear	ASTM D-4533	45 LBS
UV Resistance	ASTM D-4355	90%
Apparent Opening Size	ASTM D-4751	20 US SIEVE
Flow Rate	ASTM D-4491	200 GAL/MIN/SQ FT
Permittivity	ASTM D-4491	1.5 SEC-1

2.02 BOUND REMOVED AND RESET

- A. Products used shall meet the requirements of Section 710 of the Standard Specifications and the following:
- B. When bound is reset within pavement, cement concrete used for collar shall meet the requirements of Section M4.02.00 of the Standard Specifications.

2.03 SEDIMENT CONTROL BARRIER

A. Compost Filter Tubes

Compost filter tubes shall have a minimum diameter of 12". Compost material inside the filter tube shall meet M1.06.0 of the Standard Specifications, except for the following: no peat, manure or bio-solids shall be used; no kiln-dried wood or construction debris shall be allowed; material shall pass through a 2-inch sieve; and the C:N ratio shall be disregarded. Outer tube fabric shall be made of 100% biodegradable materials (i.e., cotton, hemp or jute) and shall have a knitted mesh with openings that allow for sufficient water flow and effective sediment capture.

PART 3 – EXECUTION

3.01 SILT SACK

- A. All existing and new catch basin structures within the limits of work shall have sediment collection sacks installed and maintained in good working order until the completion of all construction activities within the drainage collection area of each drainage structure. Sediment collection sacks (silt sacks) shall be replaced if damaged, if no longer working properly and / or as required by the Resident Engineer.

Refer to construction plan details showing the sediment collection sack device. Contractor shall be responsible for field measuring all existing and new drainage structures to ensure that the proper size sediment collection sack is provided for each structure.

Sediment removed from the silt sacks shall be handled in accordance with the requirements of Section 227 of the Standard Specifications.

3.02 BOUND REMOVED AND RESET

- A. Methods of execution used shall meet the requirements of Section 710 of the Standard Specifications and the following:
- B. Bounds reset within paved surfaces shall be reset flush to the pavement with a cement concrete collar as described in the Contract Drawings.

3.03 NPDES STORMWATER POLLUTION PREVENTION PLAN

Methods Pursuant to the Federal Clean Water Act, construction activities which disturb one acre or more are required to apply to the U.S. Environmental Protection Agency (EPA) for coverage under the NPDES General Permit for Storm Water Discharges From Construction Activities. On July 14, 2008 (73 FR 40338), EPA issued the final NPDES Construction General Permit (CGP) for construction activity.

The NPDES CGP requires the submission of a Notice of Intent (NOI) to the U.S. EPA prior to the start of construction (defined as any activity which disturbs land, including clearing and grubbing). There is a seven (7) day review period commencing from the date on which EPA enters the Notice into their database. The Contractor is advised that, based on the review of the NOI, EPA may require additional information, including but not limited to, the submission of the Storm Water Pollution Prevention Plan for review. Work may not commence on the project until final authorization has been granted by EPA. Any additional time required by EPA for review of submittals will not constitute a basis for claim of delay.

In addition, if the project discharges to an Outstanding Resource Water, vernal pool, or is within a coastal ACEC as identified by the Massachusetts Department of Environmental Protection (DEP), a separate notification to DEP is required. DEP may also require submission of the Storm Water Pollution Prevention Plan for review and approval. Filing fees associated with the notification to DEP and, if required, the SWPPP filing to DEP shall be paid by the Contractor.

The General Permit also requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the afore-mentioned statutes and regulations. The Plan will include the General Permit conditions and detailed descriptions of controls of erosion and sedimentation to be implemented during construction. It is the responsibility of the Contractor to prepare the SWPPP to meet the requirements of the most recently issued CGP. The Contractor shall submit the Plan to the Engineer for approval at least four weeks prior to any site activities. It is the responsibility of the Contractor to be familiar with the General Permit conditions and the

conditions of any state Wetlands Protection Act Order, Water Quality Certification, Corps of Engineers Section 404 Permit and other environmental permits applicable to this project and to include in the Stormwater Pollution Prevention Plan the methods and means necessary to comply with applicable conditions of said permits.

It is the responsibility of the Contractor to complete the SWPPP in accordance with the EPA Construction General Permit, provide all information required, and obtain any and all certifications as required by the Construction General Permit. Any amendments to the SWPPP required by site conditions, schedule changes, revised work, construction methodologies, and the like are the responsibility of the Contractor. Amendments will require the approval of the Engineer prior to implementation.

Included in the General Permit conditions is the requirement for inspection of all erosion controls and site conditions on a weekly basis as well as after each incidence of rainfall exceeding 0.5 inches in twenty-four hours. The Contractor shall choose a qualified individual who will be on-site during construction to perform these inspections. The Engineer must approve the contractor's inspector. In addition, if the Engineer determines at any time that the inspector's performance is inadequate, the Contractor shall provide an alternate inspector. Written weekly inspection forms, storm event inspection forms, and Monthly Summary Reports must be completed and provided to the Engineer. Monthly Summary Reports must include a summary of construction activities undertaken during the reporting period, general site conditions, erosion control maintenance and corrective actions taken, the anticipated schedule of construction activities for the next reporting period, any SWPPP amendments, and representative photographs.

The Contractor is responsible for preparation of the Plan, all SWPPP certifications, inspections, reports and any and all corrective actions necessary to comply with the provisions of the General Permit. Work associated with performance of inspections is not included under this Item. The Standard Specifications require adequate erosion control for the duration of the Contract. Inspection of these controls is considered incidental to the applicable items. This Item addresses acceptable completion of the SWPPP, any revisions/amendments required during construction, and preparation of monthly reports. In addition, any erosion controls beyond those specified in bid items elsewhere in this contract which are selected by the Contractor to facilitate and/or address the Contractor's schedule, methods and prosecution of the work shall be considered incidental to this item.

The CGP requires the submission of a Notice of Termination (NOT) from all operators when final stabilization has been achieved. Approval of final stabilization by the Engineer and confirmation of submission of the NOT will be required prior to submission of the Resident Engineer's Final Estimate.

3.04 SEDIMENT CONTROL BARRIER

- A. Prior to initial placement of barriers, the Contractor and the Engineer shall review locations specified on the plans and adjust placement to ensure that the placement will provide maximum effectiveness.

Barriers shall be staked, and/or wedged as specified herein and according to the Manufacturer's instructions. Barriers shall be securely in contact with existing soil such that there is no flow beneath the barrier. Tubes shall be tamped, but not trenched, to ensure good contact with soil.

- B. Maintenance of the sediment control barrier shall be per Section 670.60 of the Standard Specifications or per the Stormwater Pollution Prevention Plan (SWPPP), whichever is more restrictive.

The contractor shall inspect the sediment barrier in accordance with relevant permits. At a minimum, barriers shall be inspected at least once every 7 calendar days and after a rain event resulting in 0.25 inches or more of rainfall. Contractor shall be responsible for ensuring that an effective barrier is in place and working effectively for all phases of the Contract.

Barriers that decompose such that they no longer provide the function required shall be repaired or replaced as directed. If the resulting berm of compost within the fabric tube is sufficiently intact and continues to provide effective water and sediment control, barrier does not necessarily require replacement.

- C. Barriers shall be dismantled and/or removed, as required, when construction work is complete and upslope areas have been permanently stabilized and after receiving permission to do so from the Engineer.

Regardless of site context, nonbiodegradable material and components of the sediment barriers, including photo-biodegradable fabric, plastic netting, nylon twine, shall be removed and disposed off-site by the Contractor.

For naturalized areas, biodegradable, natural fabric and material may be left in place to decompose on-site. In urban, residential, or other locations where aesthetics is a concern, the following shall apply:

- Compost filter tube fabric shall be cut and removed, and compost shall be raked to blend evenly (as would be done with a soil amendment or mulch). No more than a 2-inch depth shall be left on soil substrate.

PART 4 – COMPENSATION

4.01 MEASUREMENT

- A. Measurement for SILT SACK will be made on a per EACH (EA) basis for each silt sack actually installed in a catch basin.
- B. Measurement for BOUND REMOVED AND RESET will be made on a per EACH (EA) basis inclusive of cement concrete collar as required.
- C. Measurement for MOBILIZATION shall be in conformance with Section 748.80 of the Standard Specifications.

- D. Measurement for NPDES STORMWATER POLLUTION PREVENTION PLAN will be made on a LUMP SUM (LS) basis.
- E. Measurement for SEDIMENT CONTROL BARRIER will be made on a per FOOT (FT).

4.02 PAYMENT

- A. Payment for SILT SACK will be at the per EACH (EA) contract price. This price shall include full compensation for all labor, materials, tools, equipment, maintenance, final removal, and all other incidental work necessary to complete the work of this item as indicated on the Contract Drawings and as herein specified. Removal and disposal of sedimentation is incidental to this item in conformance with the applicable provisions of Section 227 of the Standard Specifications.
- B. Payment for BOUND REMOVED AND RESET will be at the per EACH (EA) contract price in conformance with the applicable provisions of Section 710 of the Standard Specifications. This price shall include full compensation for cement concrete collar as required, all labor, materials, tools, and equipment, and all other incidental work necessary to complete the work of this item as indicated on the Contract Drawings and as herein specified.
- C. Payment for MOBILIZATION shall be in conformance with Section 748.80 of the Standard Specifications.
- D. Payment for NPDES STORMWATER POLLUTION PREVENTION PLAN including but not limited to, SWPPP preparation, required SWPPP amendments (including revisions/addenda pre, during, and post- construction) NOI and NOT submissions, certifications, DEP filing fee (if required), inspections, preparation of weekly, monthly, and other required reports, distribution of copies, and all other requirements as described in this special provision are included in the LUMP Sum price for this item. Upon final acceptance of the SWPPP, a payment equal to 50% of the Contract Lump Sum price shall be paid. The remaining 50% of the Lump Sum shall be paid in 10% increments distributed equally throughout the remaining period of the Contract, not including extensions of time.
- E. Payment for SEDIMENT CONTROL BARRIER will be at the per FOOT (FOOT) contract price. This price shall include full compensation for all labor, materials, tools, and equipment, and all other incidental work necessary to complete the work of this item as indicated on the Contract Drawings and as herein specified.

4.03 PAYMENT ITEMS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
01 53 00.01	SILT SACK	EACH
01 53 00.02	BOUND REMOVED AND RESET	EACH
01 53 00.03	MOBILIZATION	LUMP SUM

TEMPORARY CONSTRUCTION

Twin Cities Rail Trail Phase III
The City of Leominster
Leominster, MA

Bid Set
December 11, 2024

01 53 00.04	NPDES STORMWATER POLLUTION PREVENTION PLAN	LUMP SUM
01 53 00.05	SEDIMENT CONTROL BARRIER	FOOT

END OF SECTION

SECTION 01 56 39
TREE PROTECTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Include GENERAL CONDITIONS and all parts of Division 01 as part of this Section.
- B. Examine all other Sections of the specifications for requirements which affect Work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under the Contract.

1.02 SUMMARY

- A. This Section specifies requirements for the following types of Work and related items, but is not limited to:
 - 1. Providing and installing tree protection fencing.
 - 2. Class I pruning of existing trees to remain.

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. The following related work is to be performed under the designated SECTIONS.
 - 3. Section 32 05 05 – SELECTIVE DEMOLITION
 - 4. Section 31 00 00 – EARTHWORK
 - 5. Section 32 90 00 – PLANTING AND LAWNS

1.04 REFERENCES AND STANDARDS

- A. NAA: National Arborist Association Standards, National Arborist Association, 124 Route 101, Bedford, NH 03102.
- B. AAN: American Association of Nurserymen "American Standard for Nursery Stock," ANSI Z60.1, latest edition.

1.05 PERSONNEL QUALIFICATIONS

- A. All fertilizing of trees to remain shall be performed by an arborist currently certified in Massachusetts.

PART 2 - PRODUCTS

2.01 TREE PROTECTION FENCING

- A. Tree Protection fencing shall be 3/8" X 1-1/2" #1 grade spruce min. 4' ht. fence secured to posts with 8-gauge galvanized wire. Posts shall be min. 6' ht. steel channel posts or 4"x4"x6' pressure treated wood posts located at limit of tree canopy. Fence shall form an enclosure around trees and shrubs to be protected as designated on the Drawings.
- B. Tree trunk protection shall be 2"x4" wood cladding, 8' length minimum, clad together with galvanized 10 gauge wire. Trunk protection shall include burlap wrap around trunk to separate wood cladding from bark.
- C. Plastic/polypropylene "snow fence" fencing in any color will not be permitted.

2.02 WOOD CHIP MULCH

- A. Wood chip mulch shall be dark colored shredded pine bark, aged six months minimum.

2.03 WATER

- A. Potable and suitable for use on plants.

2.04 SLOW RELEASE INJECTABLE TREE ROOT FERTILIZER

- A. Tree root fertilizer shall be reviewed and approved by the Landscape Architect and the arborist.

PART 3 - EXECUTION

3.01 LIABILITY

- A. The Contractor shall be liable for all damage to existing trees and shrubs not designated for clearing and removal. Actual penalties for damage to plants shall be in accordance with the schedules defined herein, with assessed damages to be deducted from sums payable under the Construction Contract.
- B. The Engineer, the Landscape Architect or the Arborist shall decide if a plant is damaged. If damaged, the Contractor will be assessed for the damage at a cost of one hundred and fifty dollars (\$150.00) per caliper inch at breast height. This assessment will be in accordance with the "Guide for Plant Appraisal", latest edition, as published by The Council of Tree and Landscape Appraisers.

3.02 TREE PROTECTION FENCING

- A. To the extent possible, to avoid soil compaction within the root zone, construction activities including, but not limited to, vehicle movement, excavation, embankment, staging and storage of materials or equipment shall not occur underneath the canopy (drip line) of trees to remain. Where these activities will occur within 10 feet of the canopy of trees, the Contractor shall provide Individual Tree Protection as specified herein.
- B. For individual tree protection, the Contractor shall set posts and fencing at the limits of the tree canopy. Where construction activities closer to the trees is unavoidable, the Contractor shall tie branches out of the way and place wood chips to a depth of 6

inches on the ground to protect the root systems. The Contractor shall wrap the area of the trunk of the tree with burlap prior to armoring with 2x4 cladding. Cladding for tree trunks shall extend from the base of the tree to at least 8 feet from the base.

- C. All fencing, trunk protection, branch protection, and woodchips shall be maintained throughout the duration of the Contract. Protective fencing shall be repaired and woodchip mulch replaced as required during the duration of the Contract at no additional cost.
- D. The Contractor shall be held responsible for the health and survival of the existing trees in the immediate vicinity of the of the construction area. Damage that, in the Engineer's opinion, can be remedied by corrective measures shall be repaired immediately. Broken limbs shall be pruned according to industry standards. Wounds shall not be painted. Trees or shrubs that are damaged irreparably shall, at the Engineer's discretion, be replaced per the requirements of Division I of these Special Provisions. Cost of replacement trees shall be paid by the Contractor.
- E. The locations of the tree protection fencing shall be reviewed and approved by the Landscape Architect in the field before and after fencing installation. Trees and shrubs to remain and be protected and to be removed or pruned shall be flagged in the field before fencing is erected.
- F. Fencing shall be erected before construction of any kind begins. Fencing shall be securely erected, be vertically plumb and be maintained for the duration of the project and shall protect individual trees or shrubs or groups of trees or shrubs as shown on the Drawings and reviewed and adjusted in the field.
 - 1. Tree protection fencing shall be located at minimum at the edge of the drip line of the tree or around shrubs or beyond this limit, as indicated on the Drawings. The closest limit shall be at the limit of excavation or filling coordinated with the grading requirements and as approved by Landscape Architect.
- G. No material shall be stored or demolition operations carried out within the fence limits or drip line of any tree or shrub that is to be saved. No concrete washouts shall be permitted within the fencing limits.
- H. Tree protection fencing shall be removed and disposed of at the end of construction activity as reviewed by the Engineer or Landscape Architect.
- I. Tree Protection Fencing shall occur in compliance with the approved Construction Management Plan submitted as required by Division 00 – Procurement and Contracting Requirements.

3.03 TREE ROOT PROTECTION DURING CONSTRUCTION

- A. The Contractor shall assume that the majority of tree roots extend to the tree drip line or edge of canopy. Any disturbance within this zone shall result in root reduction. Tree protection fencing shall be located at minimum at the tree's drip line and in some instances further away to protect the maximum area possible around trees to remain that is close to construction.

- B. If excavation has to occur within the tree's drip line, this construction impact shall be reviewed by the Landscape Architect in the field before impact occurs. To mitigate the effects, tree roots shall be first cut cleanly by a trencher to the required depth of excavation. Exposed roots over 2 inches in diameter shall be hand trimmed with sharp shears or hand saws. Digging by backhoe at tree roots under canopy is not permitted until trencher has been through first. If digging occurs before the trencher has been through, this shall be grounds for assessing tree damage.
- C. If filling occurs within the drip line of the tree, no more than 12 inches of sandy loam shall be filled and no filling within five feet of the trunk of the tree is permitted. If more fill is required, a system of crushed stone and perforated piping under approved loam shall be installed in the filled area over tree roots at no additional cost to the Owner.

3.04 MAINTENANCE OF TREES TO REMAIN

- A. The trees which have roots that are over 20% affected by demolition, as determined by a certified arborist and reviewed by the Landscape Architect, shall be deep root watered monthly during the warm growing months of May through September, inclusive of rain, and deep root fertilized with a slow release fertilizer between November and April also under the direction of the Landscape Architect. The Arborist may also recommend any remedial insect or disease control measures that may be required for trees and shrubs that remain to preserve their health and vigor.
- B. Trees scheduled to remain and be protected within the limit of work shall be pruned to Class I standards. These include light canopy pruning, deadwood, crossed branches, and collar cuts. The trees shall be assessed for cabling and any other remedial maintenance that the Arborist recommends.
- C. Tree roots that are disturbed and are exposed during the growing season for more than two weeks shall be covered with filter fabric staked securely or covered with aged wood chips to a minimum depth of 3 inches.
- D. Trees that have over a 30% root zone loss due to demolition shall have their entire remaining root zone covered by aged wood chips to a minimum depth of 3 inches.

3.05 TREE PRUNING

- A. The Contractor shall engage a Massachusetts certified Arborists to be responsible to perform tree pruning.
- B. Tree pruning shall include:
 - 1. All trees and shrubs to remain shall be Class I light pruning, removing deadwood and crossed branches with collar cuts required before construction.
- C. Pruning shall follow NAA industry standards for safe operations and pruning techniques and only with the certified Arborist to perform or to provide on-site management and overview of the work of his crew at all times.

- D. Contractor shall provide follow up pruning at the end of the one year planting guarantee period by the certified Arborist to prune out dead wood and/or other remedial pruning for wind damage and/or damage from construction around root systems, should dieback or injury occur during this period.
- E. The Contractor shall provide a detailed memorandum with keyed plan, composed by the Arborist that documents the condition of the trees and shrubs to remain and be protected at the start of construction, the location and condition of protective fencing during construction, any damage or injuries to trees or shrubs that occurred during construction, and all remedial and maintenance work completed by his crew during construction. Contractor shall provide memorandum to the Landscape Architect and the City of Leominster as a condition of acceptance.

PART 4 - COMPENSATION

4.01 METHOD OF MEASUREMENT

- A. Tree Protection Fencing will be measured per FOOT complete in place as indicated on the Drawings, including remedial work during construction and removal after approval.
- B. Pruning of Existing Trees will be measured per EACH for the Class I pruning of all trees within project site indicated on the Drawings, including legal disposal of all pruned material.

4.02 BASIS OF PAYMENT

- A. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment, and miscellaneous items necessary to complete the Work in a satisfactory manner.

4.03 PAYMENT ITEMS

<u>ITEM NO.</u>	<u>ITEM</u>	<u>UNIT</u>
01 56 39.01	Tree Protection Fencing	FOOT
01 56 39.02	Pruning of Existing Trees to Remain	EACH

END OF SECTION

SECTION 03 30 00
CAST IN PLACE CONCRETE

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Include GENERAL CONDITIONS and all parts of Division 01 as part of this Section.
- B. Examine all other Sections of the specifications for requirements which affect Work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under the Contract.

1.02 SUMMARY

- A. This Section specifies requirements for the following types of Work and related items, but is not limited to:
 - 1. Pedestrian Concrete Paving.
 - 2. Cement Concrete Pedestrian Curb Ramps and driveways.
 - 3. Cast-in-Place reinforced concrete for footings and foundations for site furnishings and site improvements.
 - 4. Cast-in-Place reinforced concrete base slab for granite paving.

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. The following related work is to be performed under the designated SECTIONS:
 - 1. Section 01 56 39 – TREE PROTECTION
 - 2. Section 31 00 00 – EARTHWORK
 - 3. Section 32 30 00 – SITE IMPROVEMENTS

1.04 REFERENCES AND STANDARDS

- A. References herein are made in accordance with the following abbreviations and all work under this Section shall conform to the latest editions as applicable.
 - 1. American Concrete Institute (ACI)
 - a. ACI 301: Specifications for Structural Concrete for Building
 - b. ACI 305R: Hot Weather Concreting

- c. ACI 306R: Cold Weather Concreting
 - d. ACI 316R: Recommendations for Construction of Concrete Pavements and Concrete Bases
2. American Society for Testing and Materials (ASTM)
- a. ASTM 185: Welded Wire Steel Fabric for Concrete Reinforcement
 - b. ASTM 615: Deformed and Plain Billet Steel Bars for Concrete Reinforcement
 - c. ASTM C33: Concrete Aggregates
 - d. ASTM C94: Ready-Mixed Concrete
 - e. ASTM C143: Slump of Portland Cement Concrete
 - f. ASTM C150: Portland Cement
 - g. ASTM C171: Sheet Materials for Curing Concrete
 - h. ASTM C231: Air Content of Freshly Mixed Concrete by the Pressure Method
 - i. ASTM C260: Air Entraining Admixtures for Concrete
 - j. ASTM C309: Liquid Membrane-Forming Compounds for Curing Concrete
 - k. ASTM C494: Chemical Admixtures for Concrete
3. Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice
- B. Where references are made in these Specifications to standard specifications, codes, etc., of the U.S. Government, State or local authorities, or professional and industrial societies and associations, the applicable portions thereof shall govern as fully as if they were recited at length herein and shall include all revisions thereto issued as of the date of the Notice to Contractors pertaining hereto.
1. AASHTO: American Association of State Highway and Transportation Officials
 2. MassDOT: "Standard Specifications for Highways and Bridges", Massachusetts Department of Transportation (formerly Massachusetts Highway Dept. and Massachusetts Department of Public Works), Commonwealth of Massachusetts, latest edition and all Supplements.
 3. The Americans with Disabilities Act (ADA) of 1990, and to the Final Rule for the Accessibility Guidelines for Recreational Facilities and Outdoor Developed Areas by the Recreational Access Advisory Committee, US Architectural and Transportation Barriers Compliance Board, most recent edition.

4. MAAB: Massachusetts Architectural Access Board.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products who complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
- C. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of the local authorities having jurisdiction for concrete asphalt paving work.
 1. Comply with requirements of the Americans with Disabilities Act (ADA) and the Massachusetts Architectural Access Board (MAAB). If these requirements cannot be met with the grades and slopes indicated on the plans, notify the Landscape Architect immediately.
 2. Comply with requirements of the local authorities having jurisdiction concerning the location and construction of accessible curb cuts.
- D. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by requirements in the Contract Documents.
- E. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- F. Mockups: Cast mockups of full-size sections of concrete pavement to demonstrate typical joints, surface finish, texture, COLOR (including additive), and standard of workmanship.
 1. Build mockups in the location and of the size indicated or, if not indicated, as directed by the Landscape Architect.
 2. Notify the Landscape Architect seven days in advance of dates and times when mockups will be constructed.
 3. Obtain the Landscape Architect's approval of mockups before starting construction.
 4. Maintain approved mockups during construction in an undisturbed condition as a standard for judging the completed pavement.

5. Demolish and remove approved mockups from the site when directed by the Landscape Architect.
 6. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- G. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01.
- H. Before submitting design mixtures, review concrete pavement mixture design and examine procedures for ensuring quality of concrete materials and concrete pavement construction practices. Require representatives, including the following, of each entity directly concerned with concrete pavement, to attend conference:
1. Contractor's superintendent.
 2. Independent testing agency responsible for concrete design mixtures.
 3. Ready-mix concrete producer.
 4. Concrete pavement subcontractor.

1.06 SUBMITTALS

- A. Submittals shall be made in groupings where installations are complimentary, i.e. steel, steel decking, steel stairs, stair railings; roof systems/flashings; etc. Failure to comply with this requirement will be cause for rejection of any or all submittals.
- B. Submit documentation of recycled content from manufacturer for products with specified recycled content.
- C. Submit environmental data in accordance with Table 1 of ASTM E 2129 for products provided under work of this Section.
- D. As set forth in the General Conditions, prepare and submit a fully developed submittal schedule; note review times set forth in the General Conditions are deemed "average"; for large submissions allow longer review times.
- E. Submit documentation of manufacturing locations and origins of materials for products either "manufactured" and/or "manufactured and sourced" within 500 miles of the project site.
- F. Attention is directed to the General Conditions for coordination drawing requirements for this project. These drawings are critical to the proper execution of the Work and failure to honor these requirements may become the basis for denial of any and all claims for either or both "time" and "money".
- G. The Contractor is encouraged to submit for approval products made from recycled and/or environmentally responsible material. Every effort will be made by the Design

Professional Team to approve these materials; the substitution request procedure shall still be enforced.

- H. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.
- I. Design Mixtures: For each concrete pavement mixture. Include alternate mixture designs when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- J. Qualification Data: For manufacturer and testing agency.
- K. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:
 - 1. Aggregates.
 - 2. Include service record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.
- L. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements:
 - 1. Cementitious materials;
 - 2. Steel reinforcement and reinforcement accessories;
 - 3. Admixtures;
 - 4. Curing compounds
 - 5. Applied finish materials;
 - 6. Joint fillers
 - 7. Lamp Black
- M. Samples: Submit samples of the following to Landscape Architect for review and approval and for color selection before construction and before mock-up construction as noted in Item 1.06.N.2.
 - 1. Pre-molded expansion joint filler
 - 2. Expansion joint sealant
- N. Field samples.
 - 1. General:

- a. Schedule field sample construction so that field samples can be reviewed by the Landscape Architect a minimum of 7 days prior to installation of paving surfaces represented by field samples.
 - b. Locate field sample panels in areas as directed by the Landscape Architect.
 - c. Continue to construct field samples until acceptable. Rejected samples shall be removed from the site.
 - d. Final samples shall remain undisturbed and shall be maintained for the duration of construction, becoming the standard for acceptance of all proposed elements. Samples shall show all aspects of finish paving appearance including color, jointing, edge treatment, sealing, cleanliness and fastening.
 - e. Remove panels from site at completion of project, unless otherwise directed by the Landscape Architect.
 - f. Construct field sample panels or areas for each different type of paving system to demonstrate ability to achieve types of setting bed, joints, color, and surface texture required.
 - g. Provide field samples simulating actual design and execution conditions for paving materials, mixing of paving materials, installation sequence, curing, use of temporary protective coating system, and methods for correction of defective work.
2. Provide the following mock-ups to be constructed on site for review by the Landscape Architect:
- a. 5'x 5' Cast-in-Place Concrete Pavement Pad

1.07 PROJECT CONDITIONS

A. Traffic Control

1. Maintain access for vehicular and pedestrian traffic as required for other construction activities.

B. Environmental Limitations

1. Do not apply concrete materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure.

PART 2 - PRODUCTS

2.01 REINFORCEMENT

- A. Steel reinforcing bars shall conform to ASTM A615, Grade 60, deformed.

1. Bars employed as dowels shall be hot-rolled plain rounds.
- B. Steel wire: ASTM A82, plain cold drawn steel.
- C. Welded wire fabric reinforcement shall conform to the applicable requirements of ASTM A185. Fabric reinforcement shall be furnished in flat sheets. Fabric reinforcement in rolls will not be permitted. Welded wire fabric sized as shown on the Drawings.
- D. Supports for Reinforcement: Bolsters, chairs, and other devices for spacing, supporting, and fastening reinforcing bars, and welded wire fabric in place shall be wire bar-type supports complying with CRSI specifications.
 1. For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs.
 2. For exposed-to-view concrete surfaces where legs of supports are in contact with forms, provide supports with legs that are protected by plastic (CRSI, Class 1).

2.02 PORTLAND CEMENT CONCRETE

- A. Portland cement concrete shall:
 1. Have a maximum water cement ratio of 0.45 conforming to ACI 316R.
 2. Compressive strength shall be minimum 4,000 PSI for walks, 3,500 PSI for footings, or as specified in drawings after 28 days for all concrete work.
 3. Be Air-entrained type conforming to ASTM C94. Air content by volume shall be 6 percent +/- 1 percent and shall be tested in accordance with ASTM C260.
 4. Placed with a slump not less than 3 inches nor greater than 4 inches, determined in accordance with ASTM C143.
 5. Use cement conforming to ASTM C150, Type I or II. Only one color of cement, all of the same manufacturer, shall be used for the work. Color shall be light-medium grey when cured. Dark grey concrete shall not be permitted.
 6. Use fine and coarse aggregates conforming to ASTM C33.
 7. Contain a water reducing agent to minimize cement and water content of the concrete mix at the specified slump. Water reducing agent shall conform to ASTM C494, Type A.
 8. Contain no calcium chloride or admixtures containing calcium chloride shall be added to the concrete. No admixtures other than those specified shall be used in the concrete without the specific written permission of the Engineer in each case.

2.03 CURING MATERIALS FOR CONCRETE

- A. Curing shall be accomplished by the following methods:

1. Moist curing with burlap covering.
2. Curing paper, non-staining, fiber reinforced laminated Kraft bituminous product conforming to ASTM C171. Four mil polyethylene sheeting may be substituted for curing paper.
3. Curing compound, a resin-base, non-pigmented, non-staining compound conforming to ASTM C309, Type 1.

2.04 EXPANSION JOINTS

- A. Expansion joint filler shall be pre-formed non-foam type conforming to ASTM D1752, Type II, similar to Sealtight Cork Expansion Joint Filler, manufactured by W.R. Meadows, Inc., Elgin, IL 60120, or asphaltic impregnated pre-molded cane fiber joint filler, as manufactured by Owen, Inc., or approved equivalent.

Foam tear off strip pre-molded joint filler for concrete joint filler will be rejected by the Landscape Architect.

1. Premolded filler shall be one piece for the full depth and width of the 3/8" joint, cleanly and evenly cut down 1/2 inch from top of concrete surface to receive colored sealant.
 2. Colored sealant shall match color of concrete as closely as possible or be slightly darker.
- B. Smooth dowel between slabs, if approved, shall be hot rolled plain steel dowel bonded at one end and operating in smooth close-fitting sleeve (of same material) at the other.

2.05 FORMS

- A. Cylindrical Forms: Sonotube Fibre Forms, wax-impregnated strippable forms manufactured by Sonoco Products Company, General Products Division, ABS or PVC plastic reusable forms, or approved equivalent.
- B. Forms for Exposed Finish: Plywood, metal, metal-framed plywood faced, or other acceptable panel materials. Plywood shall be APA Ref. 1 B-B (Concrete Form), Class I Exterior Grade plywood or B-B or A-C Class I high density overlay concrete form plywood. Form work materials shall produce smooth, continuous, straight and level surfaces.
- C. Forms for Unexposed Finish: Plywood, lumber or metal, with lumber dressed on at least two edges and one side.
- D. Form Ties: prefabricated, adjustable length galvanized steel snap-off ties, with brackets, cones, cornerlocks and other accessories as necessary.
- E. Form Release Agent: Commercial formulation compounds that will not bond with, stain, or adversely affect concrete.

2.06 DETECTABLE WARNING PANEL

- A. A. Detectable Warning Panels shall be in accordance with MassDOT Construction Standard Drawing No. E 107.6.5 dated August 2010 with color to be selected by the Landscape Architect.

PART 3 - EXECUTION

3.01 PREPARATION OF SUBGRADE

- A. The subgrade of areas to be paved shall be graded and compacted as specified in Section 31 00 00 – EARTHWORK, Pavement Subbase and base.
- B. Excavation required in pavement subgrade shall be completed before fine grading and final compaction of subgrade are performed. Where excavation must be performed in completed subgrade, subbase, base, or pavement, subsequent backfill and compaction shall be performed as required by the Engineer and as specified in Section 31 00 00 – EARTHWORK.
- C. Materials shall not be stored or stockpiled on subgrade.
- D. Prepared subgrade will be inspected by the Engineer. Subgrade shall be approved for installation of the gravel base course. Disturbance to subgrade caused by inspection procedures shall be repaired.

3.02 BASE COURSE

- A. Gravel Borrow 'Type B' shall meet the requirements as specified in Section 31 00 00 – EARTHWORK.
- B. Width of base course shall extend beyond edge of the proposed pavement as shown on the drawings.
- C. Material shall be placed in lifts no more than 6 inches thick, compacted measure. Each lift shall be separately compacted to specified density.
 - 1. Material shall be placed adjacent to wall, manhole, catch basin, and other structures only after they have been set to required grade.
 - 2. Rolling shall begin at sides and progress to center of crowned areas and shall begin on low side and progress toward high side of sloped areas. Rolling shall continue until material does not creep or wave ahead of roller wheels.
 - 3. Surface irregularities which exceed 1/2 inch as measured by means of a 10 foot long straight edge, shall be re-graded and re-compacted.
- D. Base course shall be compacted at optimum moisture content to not less than 95 percent of maximum density as determined by ASTM D1557.

- E. The base course shall be kept clean and uncontaminated. Less select materials shall not be permitted to become mixed with the base course material.

3.03 STEEL REINFORCEMENT

- A. Before being placed in position, reinforcing steel shall be thoroughly cleaned of loose mill and rust scale, dirt, ice, and other foreign material which may reduce the bond between the concrete and reinforcing. Where there is delay in placing concrete after reinforcement is in place, bars shall be re-inspected and cleaned when required.
- B. Any bar showing cracks after bending shall be discarded.
- C. Unless otherwise shown on the Drawings, reinforcing shall extend within 2 inches of form work and expansion joints. Reinforcing shall continue through control joints. Adjacent sheets of fabric reinforcing shall lap 6 inches.
- D. After forms have been coated with form release agent, but before concrete is placed, reinforcing steel shall be securely wired in the required position and shall be maintained in that position until concrete is placed and compacted. Chair bars and supports shall be installed in a number and arrangement approved by the Engineer.

3.04 FORMS

- A. General: Design, erect, support, brace, and maintain formwork to support vertical, lateral, static, and dynamic loads that might be applied until concrete structure can support such loads. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances and surface irregularities complying with the following ACI 347 limits.
 - 1. Provide Class A tolerances for concrete surfaces exposed to view.
 - 2. Provide Class C tolerances for other concrete surfaces.
- B. Construct forms to provide for openings, offsets, sinkages, keyways, recesses, moldings, chamfers, blocking, screeds, bulkheads, anchorages, and inserts, and other features required for the work. Use selected materials to obtain required finishes. Solidly butt joints and provide back-up at joints to prevent cement paste from leaking.
- C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Kerf wood inserts for forming keyways, reglets, recesses, and other features for easy removal.
- D. Chamfer exposed corners and edges, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.
- E. Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before placing concrete. Re-tighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

3.05 INSTALLING EMBEDDED ITEMS

- A. General: Set and build into formwork the anchorage devices and other embedded items required for work that is attached to, or supported by, cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of items to be attached.
- B. Forms for Slabs: Set edge forms, bulkheads, and intermediate screen strips for slabs to achieve required elevations and contours in finished surfaces. Provide and secure units to support screed strips using strike-off templates or compacting-type screeds.

3.06 PREPARING FORM SURFACES

- A. Coat contact surfaces of forms with an approved, nonresidual, low-VOC form-coating compound before placing reinforcement.

3.07 CONCRETE PLACING

- A. Equipment, methods of mixing and placing, and precautions to be observed as to weather, and condition of base shall meet the requirements of ACI 316R.
- B. The Engineer shall be notified of scheduled concrete placement sufficiently in advance of start of operation to allow preliminary inspection of the work, including subgrade, forms, and reinforcing steel.
- C. Work shall not be performed during rainy weather or if rain is expected within 24 hours of paving. Work shall not be performed when the temperature is less than 40°F (4.4°C) or higher than 95°F (35°C) without special treatment. Refer to articles 3.13 and 3.14.
- D. Adjacent work shall be protected from stain and damage. Damaged and stained areas shall be replaced or repaired to equal their original conditions.
- E. Existing concrete, earth, and other water-permeable material against which new concrete is to be placed shall be thoroughly damp when concrete is placed. There shall be no free water on surface.
- F. Concrete which has set or partially set before placing shall not be used. Retempering of concrete will not be permitted.
- G. Concrete shall be thoroughly vibrated, or otherwise consolidated to secure a solid and homogeneous mass, thoroughly worked around reinforcement and into corners of forms.
- H. When joining fresh concrete to concrete which has attained full set, the latter shall be cleaned of foreign matter, and mortar laitance shall be removed by chipping and washing. Clean, roughened base surface shall be saturated with water, but shall have no free water on surface. A coat of 1:1 cement-sand grout, approximately 1/8 inch thick, shall be well scrubbed into the thoroughly dampened concrete base. New concrete shall be placed immediately, before grout has dried or set.

3.08 FINISHING

- A. Finishes of concrete elements shall match samples reviewed in the field by the Landscape Architect before final construction. Concrete surfaces shall be screeded and finished true to line and grade, and free of hollows and bumps. Surface shall be dense and smooth.
- B. Finished concrete surface for concrete subbases shall be woodfloated to a slightly rough surface. Surface shall not deviate more than 1/4 inch in 10 feet.
- C. Finished concrete surfaces on vertical surfaces and/or walls shall be wood-floated and steel troweled or if pedestrian pavement, shall be medium broom finished perpendicular to line of travel, to a uniform surface with smoothly tooled joints all around. Surface shall not deviate more than 1/8 inch in 10 feet.
- D. Horizontal walkway or exposed slab concrete shall have a medium broom finish, with direction of grooves in concrete surface perpendicular to length of concrete band, slab, or pad, with score and expansion joints cleanly tooled all around. "Window pane" border is NOT desired on any score or expansion joint finishing. After concrete has set sufficiently to prevent coarse aggregate from being torn from surface, but before it has completely set, brooms shall be drawn across the surface to produce a pattern of small parallel grooves. Broomed surface shall be uniform, with no smooth, unduly rough or porous spots, or other irregularities. Coarse aggregate shall not be dislodged by brooming operation.
- E. Score joints shall be spaced as shown in the Drawings, and expansion joints less than 30' on center and at all vertical surfaces such as facades, walls, curbs, pedestrian curb ramps, and utility covers and posts.
- F. Immediately following finishing operations, arises at edges and both sides of expansion joints shall be rounded to a 1/4 inch radius. Control joints to be tooled shall be scored into slab surface with scoring tool. Adjacent edges of control joint shall at same time be finished to a 1/4 inch radius.
- G. Where finishing is performed before end of curing period, concrete shall not be permitted to dry out, and shall be kept continuously moist from time of placing until end of curing period, or until curing membrane is applied.
- H. Concrete pads and pedestrian paving shall have a medium broom finish perpendicular to travel.

3.09 CURING

- A. Concrete shall be kept continuously damp from time of placement until end of specified curing period or cured by other methods. Water shall not be added to surface during floating and troweling operations, and not earlier than 24 hours after concrete placement. Between finishing operations, surface shall be protected from rapid drying by a covering of waterproofing paper. Surface shall be damp when the covering is placed over it, and shall be kept damp by means of a fog spray of water, applied as often as necessary to prevent drying, but not sooner than 24 hours after placing concrete. None of the water so applied shall be troweled or floated into surface.

- B. Concrete surfaces shall be cured by completely covering with curing paper or application of a curing compound. Concrete shall be fast curing coordinated with project completion date.
- C. Concrete cured using waterproof paper shall be completely covered with paper with seams lapped and sealed with tape. Concrete surface shall not be allowed to become moistened between 24 and 36 hours after placing concrete. During curing period surface shall be checked frequently and sprayed with water as often as necessary to prevent drying, but not earlier than 24 hours after placing concrete.
- D. Concrete cured with a curing compound shall have the compound applied at a rate of 200 square feet per gallon, in two applications perpendicular to each other.
- E. Curing period shall be seven (7) days minimum.
- F. Only if additional protection is absolutely required, the surface should remain uncovered after the seven day period for at least 4 days, after which time new and unwrinkled non-staining reinforced waterproof Kraft curing paper may be used.

3.10 EXPANSION JOINTS

- A. Expansion joints shall be 3/8 inch wide as shown on drawings and located where shown on the drawings or not more than 25 feet on center and at all vertical surfaces such as facades, walls, curbs, utility covers, and posts. Expansion joints shall be installed with premolded joint filler and colored sealant in the concrete slabs. Joint filler shall extend the full depth of the slab and full length of the expansion joint.
 - 1. For concrete walks, pavements, and pads, depth of joint filler shall be placed to form a 1-1/4 inch deep recess for sealant and backer rod below finished concrete surface.
 - 2. Use of multiple pieces to make up required depth and width of joint will not be permitted.

3.11 CONSTRUCTION JOINTS

- A. Construction joints shall be placed whenever placing of concrete is suspended for more than 30 minutes.
 - 1. Butt joints with dowels or thickened edge joint shall be used if construction joints occur at control joint locations.
 - 2. Keyed joints with tie bars shall be used if the joint occurs at any other location.

3.12 CONTROL JOINTS

- A. Control joints shall be tooled into the concrete slab in pattern shown on the Drawings, or every 5 feet o.c. typical on sidewalk construction only. Joint shall be made after concrete is finished and when the surface is stiff enough to support the weight of workmen without damage to the slab, but before slab has achieved its final set.

- B. Scoring shall cut into slab surface at least 1 inch, but in no case not less than 25 percent of slab depth.

3.13 COLD WEATHER CONCRETING

- A. Materials for concrete shall be heated when concrete is mixed, placed, or cured when the mean daily temperature is below 40°F or is expected to fall to below 40°F within 72 hours. The concrete, after placing, shall be protected by covering, heat, or both.
- B. Details of handling and protecting of concrete during freezing weather shall be subject to the approval and direction of the Engineer. Procedures shall be in accordance with provisions of ACI 306R.

3.14 HOT WEATHER CONCRETING

- A. Concrete just placed shall be protected from the direct rays of the sun. The forms and reinforcement just prior to placing shall be sprinkled with cold water. Every effort shall be made to minimize delays which will result in excessive mixing of the concrete after arrival on the site.
- B. During periods of excessively hot weather (95°F., or above), ingredients in the concrete shall be cooled with cold mixing water to maintain the temperature of the concrete at permissible levels in accordance with the provisions of ACI 305. Any concrete with a temperature above 95°F., when ready for placement, will be rejected.
- C. Temperature records shall be maintained throughout the period of hot weather giving air temperature, general weather conditions (calm, windy, clear, cloudy, etc.) and relative humidity. Records shall include checks on temperature of concrete as delivered and after placing in forms. Data should be correlated with the progress of the work so that conditions surrounding the construction of any part of the structure can be ascertained.

3.15 PROTECTION OF CONCRETE SURFACES

- A. Concrete surfaces shall be protected from traffic or damage until surfaces have hardened sufficiently.

3.16 REPAIRS AND PROTECTION

- A. Remove and replace concrete pavement that is broken, damaged, or defective or that does not comply with requirements in this Section.
 - 1. Should cracking, spauling, staining or damage of any kind that cannot be removed and repaired invisibly without damaging the surface, form, or color of the unit occur, these unacceptable units shall be replaced with new units and installed per the requirements of the contract documents, at no additional cost to the Engineer and Owner, and as a condition for Final Acceptance.
- B. Drill test cores, where directed by the Landscape Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with Portland cement concrete bonded to pavement with epoxy adhesive.

- C. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement or unless permitted by the Landscape Architect. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections. All concrete shall be clean and undamaged as one condition of acceptance.

PART 4 - COMPENSATION

4.01 METHOD OF MEASUREMENT

- A. PEDESTRIAN CONCRETE PAVING will be measured per SQUARE YARD complete in place including all excavation, grading, fine grading and compaction, labor, materials, base materials, reinforcing, equipment, and miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.
- B. CEMENT CONCRETE PEDESTRIAN CURB RAMP will be measured per SQUARE YARD complete in place including all excavation, grading, fine grading and compaction, labor, materials (incl. detectable warning panel), base materials, shipping costs, and equipment required or miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.
- C. CONCRETE FOOTINGS FOR ALL SITE IMPROVEMENTS AND FURNISHINGS will NOT be measured as separate items but will be included within the measurement of their respective Site Improvement and Furnishing.
- D. CONCRETE BASE SLAB FOR GRANITE PAVING will NOT be measured as a separate item but will be included within the measurement of Granite Paving.

4.02 BASIS OF PAYMENT

- A. Work of this Section will be paid for at the Contract unit prices and will include all materials and labor and incidentals required to install the various items.

4.03 PAYMENT ITEMS

<u>ITEM NO.</u>	<u>ITEM</u>	<u>UNIT</u>
03 33 00.01	Pedestrian Concrete Paving	SQUARE YARD
03 33 00.02	Cement Concrete Pedestrian Curb Ramp	SQUARE YARD

END OF SECTION

SECTION 31 00 00
EARTHWORK

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Include the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.
- B. Examine all other Sections of the specifications for requirements which affect Work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under the Contract.
- D. The work shall conform to the relevant provisions of the Commonwealth of Massachusetts Department of Transportation (MassDOT) Standard Specifications for Highways and Bridges 2024 Edition and the Supplemental Specifications.

1.02 SUMMARY

- A. This Section specifies requirements for the following types of work and related items, but is not limited to:
 - 1. Excavation and disposal of all materials encountered within the limits of the Contract not being removed under other items.
 - 2. Excavation of test pits to determine the location of underground utilities

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. The following related work is to be performed under the designated SECTIONS:
 - 1. Section 01 53 00 – TEMPORARY CONSTRUCTION
 - 2. Section 32 10 00 – BASES, BALLASTS, AND PAVING
 - 3. Section 32 90 00 – PLANTING AND LAWNS

PART 2 – PRODUCTS

2.01 ORDINARY BORROW

- A. Products used shall meet the requirements of Section 150 of the Standard Specifications.

2.02 GRAVEL BORROW

- A. Products used shall meet the requirements of Section 150 of the Standard Specifications.

2.03 PERSONAL PROTECTION LEVEL C UPGRADE

- A. Products shall include appropriate protective equipment (PPE) for all personnel in an area either containing or suspected of containing a hazardous environment. The protective equipment and its use shall be in compliance with the Environmental Health and Safety Program (EHASP) and all appropriate regulations and/or standards for employee working conditions.

2.04 DISPOSAL OF UNREGULATED SOIL

- A. Unregulated Soil consists of soil, fill and dredged material with measured levels of oil and hazardous material (OHM) contamination at concentrations below the applicable Reportable Concentrations (RCs) presented in the MCP. Unregulated soil consists of material which may be reused (or otherwise disposed) as fill within the Commonwealth of Massachusetts subject to the non-degradation criteria of the MCP (310 CMR 40.0032(3)), in a restricted manner, such that they are sent to a location with equal or higher concentrations of similar contaminants. Disposal areas include licensed disposal facilities, approved industrial settings in areas which will be capped or covered with pavement or loamed and seeded, and for purposes of this project should be reused as fill within the project site construction corridor whenever possible. The material cannot be placed in residential and/or environmentally sensitive (e.g. wetlands) areas. Under no circumstances shall contaminated soils be placed in an uncontaminated or less contaminated area (including the area above the groundwater table if this area shows no sign of contamination).

The Contractor shall submit to the City the proposed disposal area for unregulated soils for approval. If such a disposal area is not a licensed disposal facility, the Contractor shall submit to the Engineer analytical data to characterize the disposal area sufficiently to verify that the unregulated material generated within the City construction project limits is equal to or less than the contaminant levels at the disposal site and meets the non-degradation requirements of the MCP. In addition, the Contractor shall provide written confirmation from the owner of the proposed disposal area that s/he has been provided with the analytical data for both the materials to be disposed as well as the disposal site characterization and that s/he agrees to accept this material. A Material Shipping Record or Bill of Lading, as appropriate, shall be used to track the off-site disposal of unregulated soil and a copy, signed by the disposal facility or property owner, shall be provided to the Engineer in order to document legal disposal of the unregulated material.

2.05 DISPOSAL OF REGULATED SOIL – IN-STATE FACILITY

- A. Regulated Soil consists of materials containing measurable levels of OHM that are equal to or exceed the applicable Reportable Concentrations for the site as defined by the MCP, 310 CMR 40.0000. Regulated soil which meets the MCP reuse criteria of the applicable soil/groundwater category for this project area may be reused on site provided that it meets the appropriate geotechnical criteria established by the Engineer. Regulated Soil may be reused (as daily or intermediate cover or pre-cap contouring material) or disposed (as buried waste) at lined landfills within the Commonwealth of Massachusetts or at an unlined landfill that is approved by the Massachusetts Department of Environmental Protection

(DEP) for accepting such material, in accordance with DEP Policy #COMM-97-001, or at a similar out-of-state facility. It should be noted that soils which exceed the levels and criteria for disposal at in-state landfills, as outlined in COMM-97-001, may be shipped to an in-state landfill, but require approval from the DEP Division of Solid Waste Management and receiving facility. An additional management alternative for this material is recycling into asphalt. Regulated Soils may also be recycled at a DEP approved recycling facility possessing a Class A recycling permit subject to acceptance by the facility and compliance with DEP Policy #BWSC-94-400. Regulated Soil removed from the site for disposal or treatment must be removed via an LSP approved Bill of Lading, Manifest or applicable material tracking form. This type of facility shall be approved/permitted by the State in which it operates to accept the class of contaminated soil in accordance with all applicable local, state and federal regulations.

2.06 DISPOSAL OF REGULATED SOIL – OUT-OF-STATE FACILITY

- A. Regulated Soil consists of materials containing measurable levels of OHM that are equal to or exceed the applicable Reportable Concentrations for the site as defined by the MCP, 310 CMR 40.0000. Regulated soil which meets the MCP reuse criteria of the applicable soil/groundwater category for this project area may be reused on site provided that it meets the appropriate geotechnical criteria established by the Engineer. Regulated Soil may be reused (as daily or intermediate cover or pre-cap contouring material) or disposed (as buried waste) at lined landfills within the Commonwealth of Massachusetts or at an unlined landfill that is approved by the Massachusetts Department of Environmental Protection (DEP) for accepting such material, in accordance with DEP Policy #COMM-97-001, or at a similar out-of-state facility. It should be noted that soils which exceed the levels and criteria for disposal at in-state landfills, as outlined in COMM-97-001, may be shipped to an in-state landfill, but require approval from the DEP Division of Solid Waste Management and receiving facility. An additional management alternative for this material is recycling into asphalt. Regulated Soils may also be recycled at a DEP approved recycling facility possessing a Class A recycling permit subject to acceptance by the facility and compliance with DEP Policy #BWSC-94-400. Regulated Soil removed from the site for disposal or treatment must be removed via an LSP approved Bill of Lading, Manifest or applicable material tracking form. This type of facility shall be approved/permitted by the State in which it operates to accept the class of contaminated soil in accordance with all applicable local, state and federal regulations.

2.07 DISPOSAL OF HAZARDOUS WASTE

- A. Hazardous Waste consists of materials which must be disposed of at a facility permitted and operated in full compliance with Federal Regulation 40 CFR 260-265, Massachusetts Regulation 310 CMR 30.000, Toxic Substances Control Act (TSCA) regulations, or the equivalent regulations of other states, and all other applicable local, state, and federal regulations. All excavated materials classified as hazardous waste shall be disposed of at an out-of-state permitted facility. This facility shall be a RCRA hazardous waste or TSCA facility, or RCRA hazardous waste incinerator. This type of facility shall be approved/permitted by the State in which it operates to accept hazardous waste in accordance with all applicable local, state and federal regulations and shall be permitted to accept all contamination which may be present in the soil excavate. The Contractor shall ensure that, when needed, the facility can accept TSCA waste materials i.e.

polychlorinated biphenyls (PCBs). Hazardous waste must be removed from the site for disposal or treatment via an LSP approved Manifest.

2.08 GEOTEXTILE FABRIC FOR SEPARATION

- A. Products used shall conform to the requirements of AASHTO M 288 for the intended application, selected from the MassDOT Qualified Materials List and shall be used as shown on the contract drawings.

PART 3 – EXECUTION

3.01 UNCLASSIFIED EXCAVATION

- A. All Methods of execution used shall meet the requirements of Section 120 of the Standard Specifications and as noted on the Plans.

3.02 TEST PIT FOR EXPLORATION

- A. All Methods of execution used shall meet the requirements of Section 140 of the Standard Specifications.

3.03 ORDINARY BORROW

- B. All Methods of execution used shall meet the requirements of Section 150 of the Standard Specifications and as noted on the Plans.

3.04 GRAVEL BORROW

- A. All Methods of execution used shall meet the requirements of Section 150 of the Standard Specifications and as noted on the Plans.

3.05 CRUSHED STONE

- A. All Methods of execution used shall meet the requirements of Section 150 of the Standard Specifications and as noted on the Plans.

3.06 FINE GRADING AND COMPACTING – SUBGRADE AREA

- A. Methods of execution used shall meet the requirements of Section 170 of the Standard Specifications and as noted on the Plans.

3.07 ENVIRONMENTAL HEALTH AND SAFETY PROGRAM

- A. The Contractor shall prepare and implement a site-specific Environmental Health and Safety Plan (EHASP) which has been approved and stamped by a Certified Industrial Hygienist (CIH) and includes the preparer's name and work experience. The EHASP shall include appropriate components required by OSHA Standard 29 CFR 1910.120(b) and the Massachusetts Contingency plan (MCP) 310 CMR 40.0018 and must comply with all applicable state and federal laws, regulations, standards and guidelines, and provide a

degree of protection and training appropriate for implementation on the project. The EHASP shall be a dynamic document with provision for change to reflect new information, new practices or procedures, changing site environmental conditions or other situations which may affect site workers and the public. The EHASP shall be developed and implemented independently from the standard construction HASP required to work on all MassDOT construction projects.

Health and safety procedures provided by the Contractor shall comply with all the appropriate regulations that address employee working conditions, including but not limited to standards established by OSHA and National Institute for Occupational Safety and Health (NIOSH). Equipment used for the purpose of health and safety shall be approved by and meet pertinent standards and specifications of the appropriate regulatory agencies.

A copy of the most up-to-date version of the EHASP shall be maintained on-site at all times by the Contractor. The on-site copy shall contain the signature of the Engineer and each on-site employee of the City, Contractor, and Subcontractors involved with on-site activities. The employee's signature on the EHASP shall be deemed prima facie evidence that the employee has read and understands the plan. Updated copies of signature sheets shall be submitted to the Engineer.

The EHASP shall specify a Contractor Site Safety and Health Officer responsible for implementation of the EHASP and to oversee all construction activities, including handling, storage, sampling and transport, which require contact with or exposure to potentially hazardous materials.

The level of protection, required to ensure the health and safety of on-site personnel will be stipulated in the EHASP. The Site Safety and Health Officer shall implement the EHASP based on changing site and weather conditions, type of operation or activity, chemical compounds identified on-site, concentration of the chemicals, air monitoring data, physical state of the hazardous materials, potential duration of exposure to hazardous materials, dexterity required to perform work, decontamination procedures, necessary personnel and type of equipment to be utilized.

During implementation of the EHASP, a daily log shall be kept by the Site Safety and Health Officer and a copy shall be provided weekly to the Engineer. This log shall be used to record a description of the weather conditions, levels of personal protection being employed, screening data and any other information relevant to on-site environmental safety conditions. The Site Safety and Health Officer shall sign and date the daily log.

3.08 PERSONAL PROTECTION LEVEL C UPGRADE

- A. Contingencies for upgrading the level of protection for on-site workers will be identified in the EHASP and the Contractor shall have the capability to implement the personal protection upgrade in a timely manner. The protective equipment and its use shall be in compliance with the EHASP and all appropriate regulations and/or standards for employee working conditions.

3.09 LICENSED SITE PROFESSIONAL SERVICES

- A. Within limited areas of the project site, soils, sediments and/or groundwater may be contaminated. A Licensed Site Professional (LSP) shall be required to provide the services necessary to comply with the requirements of the MCP. These services may include sampling, analysis and characterization of potentially contaminated media, preparation of Immediate Response Action (IRA) Plans, Utility-Related Abatement Measure (URAM) and Release Abatement Measure (RAM) Plans, Imminent Hazard Evaluations, status reports, transmittal forms, release notification forms, risk assessments, completion statements, and related documents required pursuant to the Massachusetts Contingency Plan (MCP). LSP hours related to the characterization and disposal of contaminated soil and/or sediment are incidental to the disposal items. An estimate of LSP services to be provided shall be submitted to the Engineer for approval before any LSP activity begins.

The name and qualifications of the LSP and all environmental technicians to be assigned to the project shall be submitted to the Engineer for approval at least four weeks prior to initial site activities. The LSP shall have a current, valid license issued by the Massachusetts Board of Registration of Hazardous Waste Site Cleanup Professionals. The LSP shall have significant experience in the oversight of MCP activities at active construction sites. Qualification packages for the LSP and each technician shall include a resume, all recent work assignments with responsibilities identified (previous 5 years), and applicable training and certifications. A list of all Notices of Noncompliance, Notice of Audit Findings and Enforcement Orders issued by the DEP shall be submitted for all work assignments listed for the LSP and environmental technicians.

The LSP shall evaluate soil and/or sediment with discoloration, odor, and presence of petroleum liquid or sheening on the groundwater surface, or any abnormal gas or materials in the ground which are known or suspected to be oil or hazardous materials. Excavated soil and sediment which is suspected of petroleum contamination shall be field screened using the jar headspace procedures according to established DEP Guidance. All field screening equipment must be pre-approved by the Engineer. The LSP shall ensure proper on site calibration of all field screening instrumentation.

The Engineer shall be contacted immediately when observations or any field screening results verify contamination requiring further analysis, and/or enhanced management of suspect soil and/or sediment. Any enhanced management of contaminated soil to ensure proper stockpiling and storage is incidental to the LSP Services item. The LSP shall adequately characterize subsurface conditions prior to backfill in areas where contaminated material has been excavated. The Engineer shall approve the locations of the testing sites prior to the sampling.

Contaminated soil, sediment and/or groundwater shall be handled in accordance with all applicable state and federal statutes, regulations and policies. The LSP shall adequately characterize contaminated media for comparison to the requirements of the MCP. The Contractor and the LSP shall be aware of the reporting requirements for releases of oil and/or other hazardous material (OHM) as set forth in federal and state laws and regulations, and shall both be held responsible for performing the work in accordance with all applicable Federal and State laws and regulations. The LSP shall maintain written records in a clear and concise format which tracks the excavation, stockpiling, analysis and reuse/disposal of all suspect contaminated soils, sediments and groundwater. These

records shall be up-to-date and available to the Engineer on a bi-weekly basis. The LSP shall review and summarize the laboratory data from any analyses performed on contaminated media. A report shall be delivered to the Engineer outlining the material sampling methods, laboratory analysis results and proposed course of action. The laboratory report together with Chain of Custody forms for all analytical results shall be submitted to the Engineer within 14 days after completion of such analyses.

The LSP and Contractor shall be held responsible for the submission of all MCP-related documents to the Engineer at least 14 days in advance of any timeframe specified in the MCP and for the timely submission of data and tracking information as noted within this Item. All documents prepared under this Item must be reviewed and signed by the approved LSP. The Contractor and LSP shall be responsible for all fines, penalties and enforcement requirements imposed by applicable regulatory agencies for failure to meet regulatory and contract timeframes. No compensation will be provided for such fines, penalties and enforcement actions.

The Contractor and the LSP shall be aware of the reporting requirements for releases of oil and/or other hazardous material (OHM) as set forth in federal and state laws and regulations, and shall both be held responsible for performing the work in accordance with all applicable Federal and State laws and regulations.

If the Contractor causes a release of OHM, the Contractor shall be responsible for assessing and remediating the release in accordance with all pertinent State and Federal regulations, including securing the services of a LSP, at his own expense.

The LSP shall coordinate all activities involving both the City and the DEP through the Engineer. Any notification of release shall be approved by the Department before submittal to the DEP, except if an imminent hazard condition exists as defined in 309 CMR 4.03(4)(b).

B. Laboratory Testing in Support of LSP Services

Laboratory testing provides for analytical testing in support of LSP services related to maintaining MCP compliance, such as delineating the extent and type of contamination present. Sampling and testing for disposal purposes are not included.

In order to maintain compliance with the MCP or other regulatory requirements, the LSP shall request approval from the Engineer to obtain samples from various locations and depths within the project area and to perform laboratory analyses on those samples. The samples shall be delivered to a DEP-certified laboratory using proper chain-of-custody documentation for analyses which, depending upon site conditions and suspected and/or identified contaminants of concern, may include, but are not limited to, metals, polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, polycyclic aromatic hydrocarbons (PAHs), extractable petroleum hydrocarbons (EPHs) and volatile petroleum hydrocarbons (VPHs). Subsequent testing, depending upon initial results, may be required for Toxicity Characteristic Leaching Procedure (TCLP) analyses (EPA Method 1311) for metals.

3.10 DISPOSAL OF UNREGULATED SOIL, DISPOSAL OF REGULATED SOIL – IN-STATE FACILITY, DISPOSAL OF REGULATED SOIL – OUT-OF-STATE FACILITY, DISPOSAL OF HAZARDOUS WASTE

- A. The work under these Items shall include the transportation and disposal of contaminated material excavated, or excavated and stockpiled. It shall also include the cost of any additional laboratory analyses required by a particular disposal facility beyond the standard disposal test set.

Excavation of existing subsurface materials may include the excavation of contaminated soils. The Contractor shall be responsible for the proper coordination of characterization, transport and disposal, recycling or reuse of contaminated soils. Disposal, recycling or reuse will be referred to as “disposal” for the remainder of this specification unless otherwise stated. However, regardless of the use of the term herein, there will be no compensation under these items for reuse within the project limits. The Contractor will be responsible for coordinating the activities necessary for characterization, transport and disposal of contaminated soils. Such coordination will include the Engineer and his/her designee overseeing management of contaminated materials. Contaminated soils must be disposed of in a manner appropriate for the soil classification as described below and in accordance with the applicable laws of local, state and federal authorities. The Contractor shall be responsible for identifying a disposal facility(s) licensed to accept the class of contaminated soils to be managed and assure that the facility can accept the anticipated volume of soil contemplated by the project. The Contractor shall be responsible for hiring a Licensed Site Professional (LSP) and all ancillary professional services including laboratories as needed for this work. The Contractor will be responsible for obtaining all permits, approvals, manifests, waste profiles, Bills of Lading, etc. subject to the approval of the Engineer prior to the removal of the contaminated soil from the site. The Contractor and LSP shall prepare and submit to the Engineer for approval all documents required under the Massachusetts Contingency Plan (MCP) and related laws and environmental regulations to conduct characterization, transport, and disposal of contaminated materials.

- B. The Contractor shall be responsible for monitoring, sampling and testing during and following excavation of contaminated soils to determine the specific class of contaminated material. Monitoring, sampling and testing frequency and techniques should be performed in accordance with these items. Additional sampling and analysis may be necessary to meet the requirements of the disposal facility license. The cost of such additional sampling and analysis shall be included in the bid cost for the applicable disposal items. The Contractor shall obtain sufficient information to demonstrate that the contaminated soil meets the disposal criteria set by the receiving facility that will accept the material.

No excavated material will be permanently placed on-site or removed for off-site disposal until the results of chemical analyses have been received and the materials have been properly classified. The Contractor shall submit to the Engineer results of field and laboratory chemical analyses tests within seven days after their completion, accompanied by the classification of the material determined by the Contractor, and the intended disposition of the material. The Contractor shall submit to the Engineer for review all plans and documents relevant to LSP services, including but not limited to, all documents that must be submitted to the DEP.

Copies of the fully executed Weight Slips/Bills of Lading/Manifests/Material Shipping Records or other material tracking form received by the Contractor from each disposal facility and for each load disposed of at that facility, shall be submitted to Engineer and the Contractor's LSP within three (3) days of receipt by the Contractor. The Contractor is responsible for preparing and submitting such documents for review and signature by the LSP or other appropriate person with signatory authority, three (3) days in advance of transporting soil off-site. The Contractor shall furnish a form attached to each manifest or other material tracking form for all material removed off-site, certifying that the material was delivered to the site approved for the class of material. If the proposed disposition of the material is for reuse within the project construction corridor, the Contractor shall cooperate with the City to obtain a suitable representative sample(s) of the material to establish its structural characteristics in order to meet the applicable structural requirements as fill for the project.

All material transported off-site shall be loaded by the Contractor into properly licensed and permitted vehicles and transported directly to the selected disposal or recycling facility and be accompanied by the applicable shipping paper. At a minimum, truck bodies must be structurally sound with sealed tail gates, and trucks shall be lined and loads covered with a liner, which shall be placed to form a continuous waterproof tarpaulin to protect the load from wind and rain.

- C. Tools and equipment which are to be taken from and reused off site shall be decontaminated in accordance with applicable local, state and federal regulations. This requirement shall include, but not be limited to, all tools, heavy machinery and excavating and hauling equipment used during excavation, stockpiling and handling of contaminated material. Decontamination of equipment is considered incidental to the applicable excavation item.
- D. The Contractor shall be responsible for adhering to regulations, specifications and recognized standard practices related to contaminated material handling during excavation and disposal activities. The City shall not be responsible at any time for the Contractor's violation of pertinent State or Federal regulations or endangerment of laborers and others. The Contractor shall comply with all rules, regulations, laws, permits and ordinances of all authorities having jurisdiction including, but not limited to, Massachusetts Department of Environmental Protection, the U.S. Environmental Protection Agency, Federal Department of Transportation (DOT), Massachusetts Water Resources Authority (MWRA), the Commonwealth of Massachusetts and other applicable local, state and federal agencies governing the disposal of contaminated soils.

All labor, materials, equipment and services necessary to make the work comply with such regulations shall be provided by the Contractor without additional cost to the City. Whenever there is a conflict or overlap within the regulations, the most stringent provisions are applicable. The Contractor shall reimburse The City for all costs it incurs, including penalties and/or for fines, as a result of the Contractor's failure to adhere to the regulations, specifications, recognized standard practices, etc., that relate to contaminated material handling, transportation and disposal

- E. Summary of Sampling Results, Classification of Material and Proposed Disposal Option. The following information, presented in tabular format, must be submitted to the Engineer for review and approval prior to any reuse on-site or disposal off-site. This requirement is on-going throughout the project duration. At least two weeks prior to the start of any excavation activity, the Contractor shall submit a tracking template to be used to present the information as stipulated below. Excavation will not begin until the format is acceptable to the City.

Characterization Reports will be submitted for all soil, sediment, debris and groundwater characterized through the sampling and analysis programs required under Items 310000.07 through 310000.13. Each report will include a site plan which identifies the sampling locations represented in the Report. The Construction Plan sheets may be used as a baseplan to record this information.

The Sampling Results will be presented in tabular format. Each sample will be identified by appropriate identification matching the sample identification shown on the Chain of Custody Record. The sample must also be identified by location (e.g. grid number or stockpile number). For each sample, the following information must be listed: the classification (unregulated, regulated, etc.), proposed disposal option for the stockpile or unit of material represented, and, all analytical results.

Each Characterization Report will include the laboratory analytical report and Chain of Custody Record for the samples included in the Report.

Stockpiling, Transport, and Disposal.

At least two weeks prior to the start of any excavation activity, the Contractor shall submit, in writing, the following for review and shall not begin excavation activity until the entire submittal is acceptable to the City.

Excavation and Stockpiling Protocol:

Provide a written description of the management protocols for performing excavation and stockpiling and/or direct loading for transport, referencing the locations and methods of excavating and stockpiling excavated material in accordance with Items 310000.07 through 310000.09.

Disposal and Recycling Facilities:

Provide the name, address, applicable licenses and approved waste profile for disposal and recycling location(s) where contaminated soil will be disposed. Present information substantiating the suitability of proposed sites to receive classifications of materials intended to be disposed there, including the ability of the facility to accept anticipated volumes of material.

Provide a summary of the history of compliance actions for each disposal/recycling facility proposed to be used by the Contractor. The compliance history shall include a comprehensive list of any state or federal citations, notices of non-compliance, consent decrees or violations relative to the management of waste (including remediation waste) at the facility. Material should not be sent to facilities which are actively considered by the DEP, USEPA or other responsible agency to be in violation of federal, state or local

hazardous waste or hazardous material regulations. The City reserves the right to reject any facility on the basis of poor compliance history.

Transportation:

The name, address, applicable license and insurance certificates of the licensed hauler(s) and equipment and handling methods to be used in excavation, segregation, transport, disposal or recycling.

Material Tracking and Analytical Documentation for Reuse/Disposal:

The following documents are required for all excavation, reuse and disposal operations and shall be in the format described. At least two weeks prior to the start of any excavation or demolition activity, the Contractor shall submit the tracking templates required to present the information as stipulated below. Excavation or demolition will not begin until the format is acceptable to the City.

All soils, sediments and demolition debris must be tracked from the point of excavation to stockpiling to onsite treatment/processing operations to off-site disposal or onsite reuse as applicable.

Demolition Debris:

Demolition debris must be tracked if the debris is stockpiled at a location other than the point of origin or if treatment or material processing is conducted. Identification of locations will be based on the station-offset of the location. The tracking table will identify date and point of generation, any field screening such as PID or dust monitoring, visual observations/comments, quantity, and stockpile ID/processing operation location. For each unit of material tracked, the table will also track reuse of the material on-site, providing reuse date, location of reuse as defined by start and end station, width of reuse location by offset, the fill elevation range, quantity, and finish grade for said location. For demolition debris which is not reused on site, the table will also track disposal of the material as defined by disposal date, quantity and disposal facility. The table must provide a reference to any analytical data generated for the material.

Soil/Sediment:

Soil excavation will be identified based on the station-offset of the excavation location limits. The tracking table will identify date and point of generation, any field screening such as PID or dust monitoring, visual observations, quantity, and stockpile number/location. For each unit of material tracked, the table will also track reuse of the material on-site and disposal of the material offsite using the same categories identified for demolition debris above.

3.11 GEOTEXTILE FABRIC FOR SEPARATION

- A. Geotextile Fabric for Separation is intended to be used at locations of existing railroad whistle posts. Geotextile Fabric for Separation shall be constructed in accordance with the detail indicated on the Contract Drawings.

3.12 TRACK EXCAVATION

- A. All materials excavated and removed under Track Excavation shall be approved for removal prior to the Contractor commencing activities. All materials removed will become

the property of the Contractor and shall be disposed of in accordance with all local, State and Federal regulations. No stockpiling of rail materials within the Right-of-Way shall be allowed without prior approval from the Engineer.

3.13 DISPOSAL OF TREATED WOOD PRODUCTS

- A. Work under this item shall include, but not be limited to the transportation and disposal of treated wood railroad ties (removed under Items 31 00 00.01 & 31 00 00.17), fences, posts, and other treated existing wood products as required by the Engineer, which are excavated or removed by other items in the contract

PART 4 – COMPENSATION

4.01 MEASUREMENT

- A. Measurement of items shall be in accordance with Sections 120, 140, 150, 170, and 751 of the Standard Specifications unless otherwise stated below.
- B. Measurement for ENVIRONMENTAL HEALTH AND SAFETY PROGRAM will be made on a per LUMP SUM (LS) basis in conformance with the Contract Drawings.
- C. Measurement for PERSONAL PROTECTION LEVEL C UPGRADE will be made on a per HOUR (HR) basis in conformance with the Contract Drawings.
- D. Measurement for LICENSED SITE PROFESSIONAL SERVICES will be made on a per HOUR (HR) basis in conformance with the Contract Drawings.
- E. Measurement for DISPOSAL OF UNREGULATED SOIL will be made on a per TON basis in conformance with the Contract Drawings.
- F. Measurement for DISPOSAL OF REGULATED SOIL – IN-STATE FACILITY will be made on a per TON basis in conformance with the Contract Drawings.
- G. Measurement for DISPOSAL OF REGULATED SOIL – OUT-OF-STATE FACILITY will be made on a per TON basis in conformance with the Contract Drawings.
- H. Measurement for DISPOSAL OF HAZARDOUS WASTE will be made on a per TON basis in conformance with the Contract Drawings.
- I. Measurement for GEOTEXTILE FABRIC FOR SEPARATION will be made on a per SQUARE YARD (SY) basis in conformance with the Contract Drawings.
- J. Measurement for TRACK EXCAVATION will be made on a per FOOT (FT) of single track removed basis. The measurement will be along the centerline between the 2 rails that form the single track. A single track is defined as a pair of rails, ties and all connecting hardware.
- K. Measurement for DISPOSAL OF TREATED WOOD PRODUCTS will be made on a per TON basis in conformance with the Contract Drawings.

4.02 PAYMENT

- A. Payment of items shall be in accordance with Sections 120, 140, 150, 170, and 751 of the Standard Specifications unless otherwise stated below.
- B. Payment for ENVIRONMENTAL HEALTH AND SAFETY PROGRAM will be at the per LUMP SUM (LS) contract price. This price shall include full compensation for all labor, materials, tools, and equipment, and all other incidental work necessary to complete the work of this item as indicated on the Contract Drawings and as herein specified.
- C. Payment for PERSONAL PROTECTION LEVEL C UPGRADE will be at the per HOUR (HR) contract price. This price shall include full compensation for all labor, materials, tools, and equipment, and all other incidental work necessary to complete the work of this item as indicated on the Contract Drawings and as herein specified.
- D. Payment for LICENSED SITE PROFESSIONAL SERVICES will be at the per HOUR (HR) contract price. This price shall include full compensation for all labor, materials, tools, and equipment, and all other incidental work necessary to complete the work of this item as indicated on the Contract Drawings and as herein specified.
- E. Payment for DISPOSAL OF UNREGULATED SOIL will be at the per TON contract price. This price shall include full compensation for all labor, materials, tools, and equipment, and all other incidental work necessary to complete the work of this item as indicated on the Contract Drawings and as herein specified.
- F. Payment for DISPOSAL OF REGULATED SOIL – IN-STATE FACILITY will be at the per TON contract price. This price shall include full compensation for all labor, materials, tools, and equipment, and all other incidental work necessary to complete the work of this item as indicated on the Contract Drawings and as herein specified.
- G. Payment for DISPOSAL OF REGULATED SOIL – OUT-OF-STATE FACILITY will be at the per TON contract price. This price shall include full compensation for all labor, materials, tools, and equipment, and all other incidental work necessary to complete the work of this item as indicated on the Contract Drawings and as herein specified.
- H. Payment for DISPOSAL OF HAZARDOUS WASTE will be at the per TON contract price. This price shall include full compensation for all labor, materials, tools, and equipment, and all other incidental work necessary to complete the work of this item as indicated on the Contract Drawings and as herein specified.
- I. Payment for GEOTEXTILE FABRIC FOR SEPARATION will be at the per SQUARE YARD (SY) contract price. This price shall include full compensation for all labor, materials, tools, and equipment, and all other incidental work necessary to complete the work of this item as indicated on the Contract Drawings and as herein specified.
- J. Payment for TRACK EXCAVATION will be made at the per TON contract price. This price shall include all labor, tools, equipment, materials, testing, loading, transportation, approvals, and permits necessary for the completion of the work.

In areas of the project where the rails have already been removed and the timber cross ties remain, their removal will be measured and paid for under Item 31 00 00.01, UNCLASSIFIED EXCAVATION.

Disposal of treated wood products shall be measured and paid for under Item 31 00 00.17, DISPOSAL OF TREATED WOOD PRODUCTS.

- K. Payment for DISPOSAL OF TREATED WOOD PRODUCTS will be at the per TON contract price. This price shall include full compensation for all labor, tools, equipment, materials, testing, loading, transportation, approvals, and permits necessary for the completion of the work.

4.03 PAYMENT ITEMS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
31 00 00.01	UNCLASSIFIED EXCAVATION	CUBIC YARD
31 00 00.02	TEST PIT FOR EXPLORATION	CUBIC YARD
31 00 00.03	ORDINARY BORROW	CUBIC YARD
31 00 00.04	GRAVEL BORROW	CUBIC YARD
31 00 00.05	CRUSHED STONE	TON
31 00 00.06	FINE GRADING AND COMPACTING – SUBGRADE AREA	SQUARE YARD
31 00 00.07	ENVIRONMENTAL HEALTH AND SAFETY PROGRAM	LUMPSUM
31 00 00.08	PERSONAL PROTECTION LEVE C UPGRADE	HOURL
31 00 00.09	LICENSED SITE PROFESSIONAL SERVICES	HOURL
31 00 00.10	DISPOSAL OF UNREGULATED SOIL	TON
31 00 00.11	DISPOSAL OF REGULATED SOIL – IN-STATE FACILITY	TON
31 00 00.12	DISPOSAL OF REGULATED SOIL – OUT-OF-STATE FACILITY	TON
31 00 00.13	DISPOSAL OF HAZARDOUS WASTE	TON
31 00 00.14	GEOTEXTILE FABRIC FOR SEPARATION	SQUARE YARD
31 00 00.15	TRACK EXCAVATION	FOOT
31 00 00.16	DISPOSAL OF TREATED WOOD PRODUCTS	TON

END OF SECTION

SECTION 32 05 05
SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Include GENERAL CONDITIONS and all parts of Division 01 as part of this Section.
- B. Examine all other Sections of the specifications for requirements which affect Work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under the Contract.

1.02 SUMMARY

- A. This Section specifies requirements for the following types of Work and related items, but is not limited to:
 - 1. Selective clearing and grubbing, and thinning of existing vegetation within the project limits. Class I pruning of existing trees to remain is the work of Section 01 56 39 – TREE PROTECTION.
 - 2. Clearing and grubbing of lawn with roots removed.
 - 3. Saw cutting of bituminous concrete pavement, including base materials.
 - 4. Saw cutting of all cement concrete pavement, including base materials.
 - 5. Removal, salvage, and storage for reuse of unit paving as indicated on the Drawings and as described in Section 32 30 00 – SITE IMPROVEMENTS.

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. The following related work is to be performed under the designated SECTIONS:
 - 1. Section 32 05 05 – SELECTIVE DEMOLITION
 - 2. Section 01 56 39 – TREE PROTECTION
 - 3. Section 31 00 00 – EARTHWORK
 - 4. Section 32 30 00 – SITE IMPROVEMENTS
 - 5. Section 03 30 00 – CAST IN PLACE CONCRETE

1.04 QUALITY ASSURANCE

- A. All work under this section shall conform to the latest edition of each of the following Reference Standards:
1. MassDOT: "Standard Specifications for Highways and Bridges", Massachusetts Department of Transportation (formerly Massachusetts Highway Dept. and Massachusetts Department of Public Works), Commonwealth of Massachusetts, latest edition and all Supplements.
 2. TCIA: Tree Care Industry Association, Pruning Standards: "Standards for Pruning Shade Trees," and "Standards for Pesticide Application Operations" latest editions, NAA, P.O. Box 1094, Meeting Place Mall, Route 101, Amherst, NH 03031.

PART 2 - MATERIALS

2.01 BACKFILL

- A. The Contractor shall provide suitable compacted gravel borrow backfill as specified under Section 31 00 00 – EARTHWORK to fill holes or voids left by removal of site features.
- B. The Contractor shall provide all pipe cap ends, mortar, brick and other material needed to cap off or plug pipes of various sizes and kinds. Materials used shall comply with requirements of applicable utility company and/or The City of Leominster.

2.02 ABANDONED UTILITIES

- A. Plugs installed at the open ends of the pipe in the abandoned structures shall be 12-inch thick Class "B" cement concrete, or 8-inch thick masonry as approved by The City of Leominster.
- B. Precast cement concrete plugs that are used shall meet the requirements for Class "B" type concrete and shall be free of cracks and spalls. Brick masonry plugs shall be made of brick meeting the requirements of ASTM C32, for grade SS, hard brick.
- C. Mortar shall be composed of Portland cement, hydrated lime, and sand in the volume of sand shall not exceed three (3) times the sum of the volumes of cement and lime. The proportions of cement and lime shall be as directed and may vary from 1:1/4 for dense hard-burned brick to 1:3/4 for softer brick. In general, mortar for grade SS brick shall be mixed in the volume proportions of 1:1/2:4-1/2; Portland cement to hydrated lime to sand.
- D. Material proposed as fill for abandoned structures shall be 3/4" crushed stone meeting the specifications of Section 31 00 00 – EARTHWORK.

2.03 PEDESTRIAN AND VEHICULAR ACCESS AND SAFETY

- A. Provide construction, directional, and warning signs as indicated on the Drawings, and specified in Division 01 Special Conditions, and as required to maintain the safety of the general public.

- B. Provide temporary vehicular ramps and other items required to provide construction access.
- C. Pedestrian access shall occur in compliance with the approved Construction Management Plan submitted as required by Section 01 14 00 WORK RESTRICTIONS.

PART 3 - EXECUTION

3.01 DEMOLITION AND REMOVALS PROCEDURES AND GUIDELINES

- A. Prior to scheduled start of demolition procedures, notify the Engineer, DIG SAFE, The City of Leominster, and all local utilities and authorities owning conduit, wire or pipes to, through or across the site where the structures to be demolished and/or protected are located. In addition, arrange to have all services such as water, gas, steam, electricity, low-tension service and telephone disconnected at the service mains in accordance with the rules and regulations governing the utilities involved. All inactive wires, electric services, drops and connections shall be removed and all storm and sanitary sewers leading from structures to be demolished shall be capped at the street line.
- B. The Contractor shall, prior to conducting any demolition or removal of rubbish or debris from the site, furnish on a form supplied to the Engineer, written evidence satisfactory to the Engineer that he has an approved dumping location for debris and/or spoil from his demolition and excavation activities.
- C. The Contractor shall secure all necessary and required permits and other entities before starting this project. It shall be the responsibility of the Contractor to obtain and pay for all permits and bonds as required for the execution of the Work under this Contract. Until DIG SAFE has marked the site, no work may begin.
- D. The Contractor shall assume complete responsibility and liability for the safety of the Public who will traverse through the site and the structural integrity and safety of all excavations, stored items, work, and utilities to remain during demolition. Refer to the Drawings for additional requirements and parameters, which are specific to this site. The Contract Documents are preliminary guidelines for the Contractor to achieve this end but are not complete and shall be modified to suit the requirements of construction phasing and changing access ways.
- E. The Contractor shall take adequate precautions to protect all walks, roads, streets, curbs, pavements, trees and planting, on or off the premises, and shall repair and replace with the same or better materials and workmanship and as directed by the Engineer, any damage caused by construction.
- F. Contractor shall insure that traffic is maintained throughout construction and that flaggers and police details are provided by the Contractor at his/her expense to maintain right-of-way and public safety for vehicles entering and exiting the site and during construction in the public rights-of-way and as required by The City of Leominster.
- G. Provide safeguards including, but not limited to, warning signs, barricades, temporary fences and pathways, warning lights, temporary crosswalks and handicap ramps

compliant with The City of Leominster requirements, secure gates and locks, and other items required for protection and convenience of personnel and the general public during performance of all work and as shown in the Drawings and specified herein.

- H. All features related to protection shall be maintained until that unit of work has been completed to the point that the danger no longer exists or until the end of construction, as applicable and reviewed by the Engineer.
- I. Completely remove from the project area all demolished materials not for reuse and dispose of all materials off the site in a legal manner. Disposal of the materials shall be done in such a manner that there shall be no accumulations of any demolition material, which may, in the opinion of the Engineer, the Fire Department or any other public agency having jurisdiction, constitute a hazard.
- J. Items shown on the Drawings or designated by notation to be removed shall be removed from the site and properly and legally disposed of by the Contractor after review in the field by the Engineer and/or representative of The City of Leominster.
- K. Items indicated on the Contract Drawings or in the Specifications to be removed, transported and stored (salvaged) shall be transported to The City of Leominster DPW Yard and unloaded and stacked as directed by the Engineer or representative of the City. Items to be removed and reused may be stored in a protected and secure location on site or in a location off site as approved by the Engineer.
- L. Completely demolish and remove all foundations, slabs, and footings and other below grade structures indicated on the Drawings unless otherwise specified or called out in the Drawings.
- M. If the Contractor encounters rock or old building foundation during excavation, follow the procedures spelled out in the Section 31 00 00 - EARTHWORK. If the Contractor encounters old utility lines during excavation, follow the procedures specified in Sections 31 00 00 - EARTHWORK, 22 10 00 - PLUMBING PIPING, 22 13 00 - FACILITY SANITARY SEERAGE, 22 14 00 - FACILITY STORM DRAINAGE, and 26 00 00 - ELECTRICAL.
- N. Conform to the specifications and standard practices of the affected utility Engineers. Coordinate with utility Engineers, which work shall be done by the Contractor and which work shall be done by utility Engineer at Contractor's expense. Ensure continuity of all existing utility services to all users except when the utility Engineer determines that temporary interruption is required.
- O. Unless otherwise indicated or authorized in writing by the Engineer, maintain all utility facilities complete in place.
- P. Abandoned Facilities
 - 1. Demolish and remove abandoned utility facilities in conflict with the work.
 - 2. Do not undertake demolition or removal of the service until written approval for such work has been obtained from the utility Engineer or the City.

3. When abandoned facilities are indicated to be left in place, plug or cap the ends of conduits and pipes, as indicated. Remove abandoned utility manholes, junction boxes, and similar structures to a minimum of two feet below finish grade and the fill remaining void with sand or select fill, as specified in Section 31 00 00 – EARTHWORK. After the plugging or capping of conduits and pipes has been completed. Puncture or break the bottom slabs of manholes and similar structures to provide drainage. Backfill and compact excavations resulting from removal of utility facilities, as required.
 - Q. Provide, install, and maintain all temporary facilities required to provide interim utility service when a utility facility is to be relocated and when a utility facility to be replaced is abandoned prior to replacement.
 - R. Where an existing utility facility is encountered which is not indicated, or which is determined to be a different utility service than that indicated, promptly notify the Engineer/Landscape Architect before further action.
 - S. If, upon exposure, the condition or location of a facility to be supported complete-in-place is found by the Engineer/Landscape Architect to be uns ~~ae~~ for support or for maintenance of service, replace or reconstruct the facility as required, with prior approval of the Engineer/Landscape Architect and the utility Engineer.
 - T. All frames, castings, and grates shall be removed prior to filling the manholes and catch basins.
 - U. Plugs shall be of adequate strength to withstand the full soil and groundwater pressure. Precast concrete plugs that are used must be made watertight by caulking with a suitable compound that is approved by the Engineer.
 - V. Plugs shall be able to withstand at least five (5) pounds per square inch water pressure.
 - W. Plugs shall be installed flush with the interior wall of the structure.
 - X. Contractor shall break the bottom of structures to be abandoned with hoe-ram device or equipment approved by the Engineer/Owner.
 - Y. Structure shall be filled completely with ¾" crushed stone.
- 3.02 DUST AND NOISE CONTROL
- A. The Contractor shall submit a dust and noise control plan and guidelines for review by the Engineer before construction begins.
 - B. Contractor shall wet down thoroughly all work during demolition and construction to prevent spread of dust twice per day, or as applicable as reviewed by the Engineer. Make all arrangements and pay for all water and necessary connections.
 - C. Every effort shall be made to keep noise levels down before the hour of 9 AM. Work shall not begin before 7 AM or occur after 5 PM, on weekends or holidays, except with

permission of The City of Leominster obtained at least three working days in advance of expected work.

3.03 SALVAGED AND STORED MATERIAL

- A. Site items to be stored for reuse shall be protected during and after removal. Items shall be stored in a secure location, protected from theft and vandalism.
- B. Existing gravel base to be reused shall be stockpiled, at the discretion of the Contractor, and shall be stored in such a way that there will be no danger from sliding or erosion.
- C. Stockpiling shall occur in compliance with the City of Leominster and Engineer.

3.04 TREE REMOVAL AND GRUBBING

- A. Only trees and areas of clearing designated on the Drawings shall be removed. No vegetation shall be removed incidentally to other Work without the Engineer's approval. Vegetation shall be removed to install seeding and plantings as shown on the Drawings and as reviewed with the Engineer in the field and according to the Order of Conditions.
- B. Remove trees following TCIA Standards for safety and removal. Trees shall be cut to level with existing grade, as indicated on the Drawings, with stumps and roots removed to proposed finished grade. All materials removed shall be legally disposed of off-site. Depressions caused by removal of stumps or roots shall be filled and compacted with sandy loam material suitable for filling and compacting. Grade the area around the removed stump flush with surrounding grade, with 6" approved loam.
- C. Trees to be removed whose root zones extend into root zones of trees to remain shall have their root zones trench-cut close to the trunk before removal, so as to minimize damage to root zones of trees to remain.
- D. Fell trees in a manner that avoids damaging other vegetation or structures.
- E. Chipping of trees and branches to produce mulch is permitted if Engineer so desires, except for Black Locust, Elm and Walnut. Chips may be stockpiled on site only if directed by Engineer and used as mulch only after six months of aging. Remove Locust, Elm and Walnut wood to approved off-site location.
- F. Have any damage done to tree crowns or root systems of trees to remain repaired immediately by an approved tree surgeon at no cost to the Engineer or City of Leominster. Repair any accidental injuries to the bark, trunk and branches immediately by pruning and trace cutting with a clean, sharp knife.
- G. Remove all debris within the limit of Work. Do not use heavy equipment to remove clippings and debris within the protected root zones of plants to remain. Dispose of trees, shrubs and stumps off-site according to local laws. Burning is not permitted.
- H. All site preparation actions pertaining to tree and plant removals shall be done in coordination with those methods specified in Section 01 56 39 - TREE PROTECTION.

PART 4 - COMPENSATION

4.01 METHOD OF MEASUREMENT

- A. Measurement for CLEARING AND GRUBBING will be made on a per ACRE basis including all labor, materials, and equipment required or miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.
- B. Measurement for SELECTIVE CLEARING AND THINNING will be made on a per ACRE basis including all labor, materials, and equipment required or miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.
- C. Measurement for SAWCUTTING of ASPHALT PAVEMENT will be made on a per FOOT basis including all labor, materials, and equipment required or miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.
- D. Measurement for SAWCUTTING of PORTLAND CEMENT CONCRETE will be made on a per FOOT basis including all labor, materials, and equipment required or miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.

4.02 BASIS OF PAYMENT

- A. Payment for the Work of this Section will be made at the respective Contract unit prices for the quantities contracted for and will include but not limited to all materials, equipment, accessories, excavation and backfill, delivery of indicated salvage materials to The City of Leominster DPW storage yard labor and incidentals required to complete the various items complete.

4.03 PAYMENT ITEMS

<u>ITEM NO.</u>	<u>ITEM</u>	<u>UNIT</u>
32 05 05.01	Clearing and Grubbing	ACRE
32 05 05.02	Selective Clearing and Thinning	ACRE
32 05 05.03	Saw Cutting of Asphalt Pavement	FOOT
32 05 05.04	Saw Cutting of Portland Cement Concrete Pavement	FOOT

END OF SECTION

SECTION 32 10 00
BASES, BALLAST, AND PAVING

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Include the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.
- B. Examine all other Sections of the specifications for requirements which affect Work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under the Contract.
- D. The work shall conform to the relevant provisions of the Commonwealth of Massachusetts Department of Transportation (MassDOT) Standard Specifications for Highways and Bridges 2024 Edition and the Supplemental Specifications.

1.02 SUMMARY

- A. This Section specifies requirements for the following types of work and related items, but is not limited to:
 - 1. Constructing shared-use path subbases, pavements and patches at the locations shown on the plans and as required by the Engineer.
 - 2. Removing and resetting the existing brick paver walkways.

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. The following related work is to be performed under the designated SECTIONS:
 - 1. Section 03 10 00 – EARTHWORK
 - 2. Section 32 17 00 – PAVING SPECIALTIES
 - 3. Section 32 16 00 – CURBS AND GUTTERS
 - 4. Section 33 40 00 – STORMWATER UTILITIES

PART 2 – PRODUCTS

2.01 CALCIUM CHLORIDE FOR ROADWAY DUST CONTROL

- A. Products used shall meet the requirements of Section 440 of the Standard Specifications.

2.02 WATER FOR DUST CONTROL

- A. Products used shall meet the requirements of Section 440 of the Standard Specifications.

2.03 SUPERPAVE

- A. Products used shall meet the requirements of Section 450 of the Standard Specifications.

2.04 HMA FOR PATCHING

- A. Products used shall meet the requirements of Section 450 of the Standard Specifications unless otherwise noted on the Plans.

2.05 ASPHALT EMULSION FOR TACK COAT

- A. Products used shall meet the requirements of Section 450 of the Standard Specifications unless otherwise noted on the Plans.

2.06 HOT MIX ASPHALT JOINT ADHESIVE

- A. Products used shall meet the requirements of Section 450 of the Standard Specifications unless otherwise noted on the Plans.

2.07 ASPHALT MIXTURES FOR TEMPORARY WORK

- A. Products used shall meet the requirements of Section 472 of the Standard Specifications.

2.08 HOT MIX ASPHALT SIDEWALK OR DRIVEWAY

- A. Products used shall meet the requirements of Section 702 of the Standard Specifications.

2.09 IMPRINT SYSTEM – MEDIAN

- A. The material to be utilized in the Texturized Decorative Pavement shall conform to the following physical properties:

GRADE	60
	<u>Heavy traffic</u>
Average Temp. Range	25-140 degrees F
Wheel Tracking @ 113 F	less than 1 mm/hr
Wheel Tracking @ 140 F	less than 5 mm/hr
Density	2.12
Cone Flow Test	15% maximum

(5 hrs. @ 194 F) Plane Test	5% maximum
(5 hrs. @ 194 F) Indent @ 104 F	50 dmm maximum
Indent @ 122 F	75 dmm maximum
Ash Content	90% maximum
Skid Resistance Value	55-70

- B. Contractor must possess and be familiar with the specialized machinery necessary to perform the procedures as outlined and contained within this technical specification package, including, but not limited to appropriate trucks, compressors, miscellaneous asphalt equipment, dispensers, applicators, cutters and/or specialized tools, etc.

2.10 BRICK WALK REMOVED AND RELAID

- A. Products used shall match those present in the existing condition. In the event there is not a sufficient quantity of bricks suitable for resetting, the Contractor shall obtain new bricks that closely match the existing bricks at no additional cost. If surplus bricks are available upon completion of the work, the Contractor shall stack excess bricks at a location designated by the City. Surplus bricks rejected by the City shall become the property of the Contractor and disposed of at no additional cost.

Foundation for relaid brick walk shall be eight inches (8") of Gravel Borrow, Type b conforming to M1.03.0 of the Standard Specifications. The setting bed shall match what was used in original construction.

PART 3 – EXECUTION

3.01 CALCIUM CHLORIDE FOR ROADWAY DUST CONTROL

- A. Methods of execution used shall meet the requirements of Section 440 of the Standard Specifications.

3.02 WATER FOR DUST CONTROL

- A. Methods of execution used shall meet the requirements of Section 440 of the Standard Specifications.

3.03 SUPERPAVE

- A. Methods of execution used shall meet the requirements of Section 450 of the Standard Specifications.

3.04 HMA FOR PATCHING

- A. Methods of execution used shall meet the requirements of Section 450 of the Standard Specifications.

3.05 ASPHALT EMULSION FOR TACK COAT

- A. Methods of execution used shall meet the requirements of Section 450 of the Standard Specifications and as noted on the Plans.

3.06 HOT MIX ASPHALT JOINT ADHESIVE

- A. Methods of execution used shall meet the requirements of Section 450 of the Standard Specifications.

3.07 TEMPORARY ASPHALT PATCHING

- A. Methods of execution used shall meet the requirements of Section 472 of the Standard Specifications and as noted on the Plans.

3.08 HOT MIX ASPHALT SIDEWALK OR DRIVEWAY

- A. Methods of execution used shall meet the requirements of Section 702 of the Standard Specifications and as noted on the Plans.

3.09 IMPRINT SYSTEM – MEDIAN

- A. The Contractor shall be responsible for the preparation, placement and patterning of Texturized Decorative Pavement. This synthetic paving material shall be composed of hot-applied, resin-based compound formulated with a color stable pigment throughout that can be surface textured to simulate a brick running bond pattern (the color should be traditional brick red). The color shall be approved by the Engineer before installation.
- B. The Contractor must be a manufacturer authorized applicator, experienced with this specialized system, satisfactory to the Engineer. Using manufacturer prescribed methods and equipment, the Contractor shall adequately heat and uniformly mix the materials together. The Engineer will select the application color from the available pigments supplied by the manufacturer. Maximum heating temperature of the completed formulation is 440 degrees Fahrenheit.
- C. The Contractor shall then apply the heated, mixed material to the surface of the hardened, structurally sound, asphalt pavement, as required. The material shall be spread and leveled to the desired build thickness of 0.75 inches, using manufacturer's specialized ironing tools, heated sufficiently to smooth the surface to a state of readiness for texturizing. No material shall be applied when precipitation is present.
- D. A 3 foot by 3 foot "mock up" shall be constructed for review and approval by the Engineer. Cost for constructing the "mock up" shall be included in the contractor's estimate.
- E. Texturizing will begin immediately after leveling has occurred, while the material is still hot enough to allow the mold selected, to adequately penetrate the surface and create the desired pattern or form.
- F. Once the finished surface has cooled sufficiently, the application area may be opened to vehicular and/or pedestrian traffic.

- G. Any residue resulting from this work shall be removed and disposed of in a proper manner off site. The completed work area shall be left in a neat and clean condition, satisfactory to the Engineer. The products used in the surfacing system shall meet the following specifications and conform to the minimum following physical and performance properties; hot-applied, resin-based compound developed specifically for use on asphalt or cement concrete, with superior adhesion, flexibility and abrasion resistance characteristics, as well as color stability, chemical resistance and scrub ability.

3.10 BRICK WALK REMOVED AND RELAID

- A. The contractor shall examine the existing walk and reset it in the same manner. Walks reset will follow the same horizontal alignment as existing and the slope of the proposed ground and shall tie into the remaining walk without the need for a step.
- B. The Contractor shall be responsible for becoming familiar with the existing walks and shall document the construction and condition prior to removing the existing walk. The walk surface materials shall be stored and protected by the Contractor until reset. The Contractor is put on notice that it is anticipated that extensive handwork shall be required in order to complete this item. Following the construction of the side slopes in the area of the existing walks, they shall be reset. The Contractor shall coordinate the removal, storage and resetting of the existing walks with the Engineer. The Engineer shall be the sole judge on the successful completion of each walk.

PART 4 – COMPENSATION

4.01 MEASUREMENT

- A. Measurement of items shall be in accordance with Sections 440, 450, 472, 701 and 702 of the Standard Specifications unless otherwise stated below.
- B. Measurement for IMPRINT SYSTEM - MEDIAN will be made at a per SQUARE FOOT basis.
- C. Measurement for BRICK WALK REMOVED AND RELAID will be made at a per SQUARE YARD (SY).

4.02 PAYMENT

- A. Payment of items shall be in accordance with Sections 440, 450, 472, 701, and 702 of the Standard Specifications unless otherwise stated below.
- B. Payment for IMPRINT SYSTEM - MEDIAN will be at the per SQUARE FOOT (SF) contract price, which price shall be full compensation for furnishing and installing all equipment, materials and labor to provide Texturized Decorative Pavement at specified locations. This work shall include the use of wire templates, imprinting, and necessary protection to maintain traffic during the installation period as required.

- C. Payment for BRICK WALK REMOVED AND RELAID will be at the per SQUARE YARD (SY) contract price. This price shall include full compensation for furnishing all labor, tools, materials, equipment, transport and stacking, and any other incidental items for the satisfactory completion of this work as specified to the satisfaction of the Engineer.

4.03 PAYMENT ITEMS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
32 10 00.01	CALCIUM CHLORIDE FOR ROADWAY DUST CONTROL	POUND
32 10 00.02	WATER FOR ROADWAY DUST CONTROL	THOUSAND GALLON
32 10 00.03	SUPERPAVE SURFACE COURSE-9.5 (SSC - 9.5)	TON
32 10 00.04	SUPERPAVE INTERMEDIATE COURSE-19.0 (SIC - 19.0)	TON
32 10 00.05	HMA FOR PATCHING	TON
32 10 00.06	ASPHALT EMULSION FOR TACK COAT	GALLON
32 10 00.07	HMA JOINT ADHESIVE	FOOT
32 10 00.08	TEMPORARY ASPHALT PATCHING	TON
32 10 00.09	HOT MIX ASPHALT SIDEWALK OR DRIVEWAY	TON
32 10 00.10	IMPRINT SYSTEM - MEDIAN	SQUARE FOOT
32 10 00.11	BRICK WALK REMOVED AND RELAID	SQUARE YARD
	END OF SECTION	

SECTION 32 12 10
CONTROL OF INVASIVE PLANTS EXISTING ON SITE

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Include GENERAL CONDITIONS and all parts of Division 01 as part of this Section.
- B. Examine all other Sections of the specifications for requirements which affect Work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under the Contract.

1.02 SUMMARY

- A. The Work of this Section includes but is not limited to:
 - 1. Controlling invasive plants within the project limits.
 - 2. Improvement of the habitat value of the site, protection of proposed landscape restoration, improvement of future maintenance operations, and control of future spread both on site and to adjacent sites.
 - 3. An Invasive Plant Management Strategy (IPMS) for their control shall be submitted to the Landscape Architect and Engineer for review and approval before being implemented on site. The IPMS shall be measured and paid for under Section 32 12 20 – INVASIVE PLANT MANAGEMENT STRATEGY.
 - 4. The general expectation of treatment results is that ~~there~~ is no re-growth of targeted plant species at end of the first season unless otherwise addressed in the Invasive Plant Management Strategy.
 - 5. Plant species targeted for management under this item shall be as shown on the Contract Documents, as determined in the field per the site walk, and as specified in the IPMS.

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. The following item is not included in this Section and will be performed under the designated Sections:
 - 1. Section 01 53 69 – TREE PROTECTION
 - 2. Section 32 05 05 – SELECTIVE DEMOLITION
 - 3. Section 32 12 10 – INVASIVE PLANT MANAGEMENT STRATEGY
 - 4. Section 32 90 00 – PLANTING AND LAWNS

1.04 REFERENCES AND STANDARDS

A. The following references are used herein and shall mean:

1. MassDOT: "Standard Specifications for Highways and Bridges", Massachusetts Department of Transportation (formerly Massachusetts Highway Dept. and Massachusetts Department of Public Works), Commonwealth of Massachusetts, latest edition and all Supplements.
2. MassDEP: Department of Environmental Protection, Commonwealth of Massachusetts.
3. USEPA: United States Environmental Protection Agency

1.05 DEFINITIONS

A. Invasive Plant Species as described by Massachusetts Invasive Plant Advisory Group (MIPAG): "non-native species that have spread into native or minimally managed plant systems in Massachusetts, causing economic or environmental harm by developing self-sustaining populations and becoming dominant and/or disruptive to those systems."

1.06 SCHEDULE

A. Control of invasive plants shall begin immediately with the initiation of construction and continue for a minimum of two (2) growing seasons. Work shall be done during the growing season from May – October unless otherwise specified in the IPMS.

1.07 SUBMITTALS - GENERAL

- A. No work shall begin without approval of the submittals.
- B. Within fifteen (15) business days prior to the site walk, the Contractor shall submit all qualifications to the Landscape Architect and Engineer.

1.08 SUBMITTALS – COMPANY QUALIFICATIONS

- A. Contractor shall submit company qualifications to the Landscape Architect and Engineer for review and approval.
- B. Company must provide proof of qualifications by providing the following:
 1. Narrative describing company, its expertise and experience with invasive plant control.
 2. Demonstrate experience with herbicide treatment as part of restorations and in sensitive areas
 3. Describe company's technical qualifications and past performance.
- C. Company must meet licensing requirements:

1. All crew applicators must have a Massachusetts Commercial Applicator License (CORE).
 2. At least one or more applicator must have ROW certification if required for specific project.
 3. Company must provide name(s) of applicator(s) and Applicator License/Certification number for all contractor crew leaders working on the project.
 4. Company must provide documentation of any warnings, penalties or fines received in the last three (3) years.
- D. Company must provide proof of experience with invasive plant control and include following:
1. At least five (5) references from prior invasive plant control work completed in last five (5) years. Provide contact information including address, phone number and email.
 2. Provide a summary of each of these projects including nature of the problem, specific invasive vegetation treated, dates and period of treatment, methodologies used, and summary of success or not in terms of meeting performance objectives. Include summary of equipment used.
 3. Photo documentation of these projects.
 4. GPS coordinates of project locations, if available.
- E. Crew leader must have expertise with invasive plant control and provide the following:
1. Have held Core license for at least five (5) years.
 2. Resume listing five (5) or more years of experience applying pesticides with the company or with another company specializing in vegetation management.
- F. The following companies are pre-approved for the work described in this Section:
1. Groundscapes Express
P.O. Box 737
Wrentham, MA 02093
Contact: John Engwer
Phone: 508-384-7140
 2. Native Habitat Restoration
P.O. Box 334
Stockbridge, MA 01262
Contacts: Jess M. Toro: 413-358-7400, Sari Hoy: 413-394-0277
 3. New England Environmental, Inc.
15 Research Drive

Amherst, MA 01002
Contact: Scott Fisher
Phone: 413-256-0202

4. Vegetation Control Service, Inc.
2342 Main Street
Athol, MA 01331
Contact: Andrew Powers
Phone: 800-323-7706

5. Chris Polatin
Polatin Ecological Services, LLC
Old Blake Farm
334 Mountain Road
Gill, MA 01351
Phone: 413-367-5292

6. Ted Elliman
New England Wildflower Society
180 Hemenway Road
Framingham, MA 01701
Phone: 508-877-7630 ext.: 3203

1.09 SUBMITTALS – DOCUMENTS

A. Invasive Plant Management Strategy (IPMS)

1. At least thirty (30) days prior to proposed treatment the IPMS shall be submitted for approval by the Landscape Architect and Engineer. All chemicals, methods and work shall be consistent with the IPMS. The IPMS shall be as described in Section 32 12 10 – INVASIVE PLANT MANAGEMENT STRATEGY.

B. Follow-Up Treatment

1. Depending on treatment results after the first year, the IPMS may be amended for the second year to address additional concerns or adjust to conditions. Treatment shall be adjusted accordingly.

C. Herbicide Use Report

1. Within two (2) weeks after each application, the Contractor shall provide to the Landscape Architect and Engineer a completed and signed Herbicide Use Report. Where applicable, the Contractor shall provide the name/s of the associated water body/bodies affected by potential discharge, per the requirements of Sections 7.1 and 7.2 of the USEPA Pesticide General Permit for the Discharges from the Application of Pesticides.

D. Photo Documentation

1. Digital photos with date and time stamp shall be provided with IPMS and follow-up reporting. Photos shall show existing conditions and post-treatment conditions.

PART 2 - PRODUCTS

2.01 CREW

- A. Labor crew shall consist of the following:
 1. Two (2) licensed applicators
 2. Two (2) backpack sprayers and mist blowers
 3. Properly equipped spray truck with spray hoses and a tank with sufficient capacity for a day's work.

2.02 HERBICIDES

- A. All proposed herbicides shall be as approved in the IPMS. Herbicides shall be labeled for the method of treatment and shall meet all federal, state and local regulation requirements. Application rates will depend on herbicide proposed and shall be per the manufacturer's label for specific application.

PART 3 – EXECUTION

3.01 GENERAL

- A. All methods used shall be as approved in the IPMS.
- B. Prior to the start of any work, Contractor shall walk the site with the Landscape Architect, Engineer and the Owner. The purpose of the site inspection is to identify limits of work, mark locations of areas designated for treatment, and mark individual plants targeted for treatment or removal according to the IPMS. Contractor shall be responsible for marking delineated areas and plants to be preserved, removed, or otherwise treated. Fencing or other materials needed for marking and delineating protected areas shall be incidental to this item.

3.02 HERBICIDE APPLICATION

- A. All herbicide application shall conform to Massachusetts Pesticide Laws and Regulations per the Massachusetts Department of Agricultural Resources (MDAR) Pesticide Bureau.
- B. Mixing, applying and/or disposing of herbicides shall always be in accordance with instructions on their labels and all applicable federal, state, and local regulations. Mixing shall not occur within sensitive areas, wetlands, or buffer zones.
- C. Contractor shall not spray 2 hours prior to precipitation and during rain. The Contractor shall be responsible for monitoring weather conditions and adjusting the work schedule as appropriate for the herbicide and application method to be used.

- D. Targeted vegetation shall be identified and marked prior to treatment. Plants treated by foliar spray, injection or glove application or other methods that leave standing vegetation, as opposed to cut-stump application, shall remain clearly marked for identification through the contract period.
- E. Desirable vegetation shall be protected from both spray and other physical damage.
- F. Contractor is responsible for any damage to vegetation not designated for removal or treatment. Vegetation damaged shall be restored. Cost of replacement plants and/or restoration shall be borne by the Contractor.
- G. Contractor shall ensure that the public does not enter a work area while herbicide application or spraying is underway.

3.03 DISPOSAL OF INVASIVE PLANT MATERIAL

- A. All material to be cleared shall become the property of the Contractor. The satisfactory disposal of all cleared plant material (seeds, roots, woody vegetation, associated soils, etc.) shall be the Contractor's responsibility.
- B. The Contractor shall take measures to prevent viable plant material from leading to further infestations (seeds, roots, woody material, etc.) while stockpiled, in transit, or at final disposal locations. All precautions shall be taken to avoid contamination of natural landscapes with invasive plants or invasive plant material.
- C. Chipping, shredding, or on-site burning of plant material shall not be permitted unless written approval is given as part of the Invasive Plant Management Strategy.
- D. For plant material taken to an incinerating facility per the IPMS, a receipt from that facility shall be submitted to the Landscape Architect and Engineer as proof of disposal.
- E. In some instances, it may be preferable to dispose of plants on site with on-going monitoring for re-sprouting. This may be used only if method and disposal locations have been approved in the IPMS. Site work such as grading and seeding to stabilize and restore disposal area shall be incidental to this item.
- F. Contractor shall be responsible for treating areas of re-growth due to improper disposal.

3.04 MONITORING

- A. After initial herbicide treatment, all treated plants and areas shall be monitored through visual observation and re-treated as necessary and appropriate throughout the season and for the duration of the contract per the management proposal and schedule for control submitted by Contractor. Monitoring shall be incidental paid for under Item 102.33, Invasive Plant Management Strategy.

PART 4 – COMPENSATION

4.01 METHOD OF MEASUREMENT

- A. CONTROL OF EXISTING PLANTS ON SITE will be measured for payment by the HOUR of crew time spent on the project doing actual work. A crew shall be defined as a minimum of two licensed applicators each equipped with (at minimum) back-pack sprayer and mist blower. The crew shall also have a properly equipped spray truck with hoses and a tank with sufficient capacity for a full day of work.

4.02 BASIS OF PAYMENT

- A. Items will be paid at the contract unit price per Hour, which price shall include all labor, materials, equipment, tools and all incidentals required to complete the work.
- B. Payment will be based upon time spent on the project doing actual work and shall not include travel time to and from the Contractor's place of business and shall also not include time for investigative field trips.

4.03 PAYMENT ITEMS

<u>ITEM NO.</u>	<u>ITEM</u>	<u>UNIT</u>
32 12 10.01	Control Of Invasive Plants Existing On Site	HOUR

END OF SECTION

SECTION 32 12 20
INVASIVE PLANT MANAGEMENT STRATEGY

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Include GENERAL CONDITIONS and all parts of Division 01 as part of this Section.
- B. Examine all other Sections of the specifications for requirements which affect Work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under the Contract.

1.02 SUMMARY

- A. The Work of this Section includes but is not limited to:
 - 1. Providing an Invasive Plant Management Strategy (IPMS) for the control of invasive plants on the project site and shall be coordinated WITH Section 32 12 10 – CONTROL OF INVASIVE PLANTS EXISTING ON SITE.
 - 2. The IPMS shall be submitted to the Landscape Architect and Engineer for review and approval and the IPMS shall be implemented on site.
 - 3. Invasive plant control treatment on site shall be as described under Section 32 12 10 – CONTROL OF INVASIVE PLANTS EXISTING ON SITE and shall be compensated per that Section.

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. The following item is not included in this Section and will be performed under the designated Sections:
 - 1. Section 01 53 69 – TREE PROTECTION
 - 2. Section 32 05 05 – SELECTIVE DEMOLITION
 - 3. Section 32 12 10 – CONTROL OF INVASIVE PLANTS EXISTING ON SITE
 - 4. Section 32 90 00 – PLANTING AND LAWNS

1.04 REFERENCES AND STANDARDS

- A. The following references are used herein and shall mean:
 - 1. MassDOT: "Standard Specifications for Highways and Bridges", Massachusetts Department of Transportation (formerly Massachusetts Highway Dept. and

Massachusetts Department of Public Works), Commonwealth of Massachusetts, latest edition and all Supplements.

2. MassDEP: Department of Environmental Protection, Commonwealth of Massachusetts.
3. USEPA: United States Environmental Protection Agency

1.05 DEFINITIONS

- A. Invasive Plant Species as described by Massachusetts Invasive Plant Advisory Group (MIPAG): “non-native species that have spread into native or minimally managed plant systems in Massachusetts, causing economic or environmental harm by developing self-sustaining populations and becoming dominant and/or disruptive to those systems.”

1.06 SCHEDULE

- A. Control of invasive plants shall begin immediately with the initiation of construction and continue for a minimum of two (2) growing seasons. Work shall be done during the growing season from May – October unless otherwise specified in the IPMS.

1.07 SUBMITTALS – INVASIVE PLANT MANAGEMENT STRATEGY

- A. Prior to the start of any invasive plant control treatment, submit in writing an IPMS proposal and Schedule of Control for approval by the Landscape Architect and Engineer at least thirty (30) days prior to proposed treatment.
- B. The IPMS shall include the following:
 1. Description of treatment areas including identification of targeted invasive plant species, locations, approximate size of areas and digital photos with time/date stamp. Delineate treatment areas with polygons outlining their perimeter or locations of individual plants. A free-hand sketch drawn on construction plans or an aerial photo can be used to show locations.
 2. Note coordination as required with items for clearing, clearing and grubbing, tree removal, mowing, planting, and wetland mitigation.
 3. Proposed methods of treatment for each species or areas including manual removal, cutting, or herbicide treatment and proposed application rate.
 4. If herbicides are proposed, submit product label including application methods and rates (entire MSDS information need not be submitted if available online).
 5. Proposed time of treatment based on target plant species and construction schedule.
 6. Method for disposing of invasive plant material including stems, trunks, branches, roots, associated soils, etc.

7. General monitoring schedule.
 8. Preliminary re-treatment schedule. Re-treatment shall be based on assessment of initial results and time of year.
 9. Proposed performance metrics, or measure of treatment success, which shall be agreed upon by the Engineer and Owner.
 10. Expected end date of contract and last treatment.
- C. The IPMS is critical for identifying pre-construction conditions as well as strategies for minimizing import or spread of invasive plants. Failure to provide approved IPMS may jeopardize this item, in which case, the contractor will be responsible for control of invasive plants found on site at no cost to the contract.
- 1.08 SUBMITTALS – FOLLOW-UP TREATMENT SCHEDULE
- A. Depending on treatment results after the first year, the IPMS may be amended for the following year/s to address additional concerns or adjust to conditions. A follow-up treatment schedule shall follow the same format as outlined above and submitted to the Engineer for approval at least thirty (30) days prior to proposed treatment.
- 1.09 SUBMITTALS – REPORTING
- A. Within two (2) weeks after each application, the Contractor shall provide to the Landscape Architect and Engineer a completed and signed MassDOT Herbicide Use Report. Where applicable, the Contractor shall provide the name/s of the associated water body/bodies affected by potential discharge, per the requirements of Sections 7.1 and 7.2 of the USEPA Pesticide General Permit for the Discharges from the Application of Pesticides.
- 1.10 SUBMITTALS – FINAL REPORT
- A. A final report documenting status of invasive control at the end of the project may be required for regulatory purposes or for instances where control will be continued by other means. Report shall include photo documentation, notation on a plan or aerial image of area treated, summary of treatment performed, and control achieved.
- 1.11 SUBMITTALS – PHOTO DOCUMENTATION
- A. Digital photos with date and time stamp shall be provided with IPMS and follow-up reporting.

PART 2 – COMPENSATION

2.01 METHOD OF MEASUREMENT

- A. **INVASIVE PLANT MANAGEMENT STRATEGY** will be measured for payment by the HOUR. The basis for measurement shall be per the completion of tasks as approved under the Task Summary submittal.

2.02 BASIS OF PAYMENT

- A. Items will be paid at the contract unit price per Hour, which price shall include all labor, materials, equipment, tools and all incidentals required to complete the work.
- B. Payment shall not include travel time to and from the Contractor's place of business

2.03 PAYMENT ITEMS

<u>ITEM NO.</u>	<u>ITEM</u>	<u>UNIT</u>
32 12 20.01	Invasive Plant Management Strategy	HOUR

END OF SECTION

SECTION 32 16 00
CURBS AND GUTTERS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Include the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.
- B. Examine all other Sections of the specifications for requirements which affect Work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under the Contract.
- D. The work shall conform to the relevant provisions of the Commonwealth of Massachusetts Department of Transportation (MassDOT) Standard Specifications for Highways and Bridges 2024 Edition and the Supplemental Specifications.

1.02 SUMMARY

- A. This Section specifies requirements for the following types of work and related items, but is not limited to:
 - 1. Removing the present curb, curb corners and curb inlets of every type and cross section made of granite, concrete or granite-faced and resetting or stacking them or discarding them in accordance with these specifications and in close conformity with the lines and grades shown on the plans or established by the Engineer.
 - 2. Installing new granite curb for sidewalks and pedestrian curb ramps

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. The following related work is to be performed under the designated SECTIONS:
 - 1. Section 32 05 05 – SELECTIVE DEMOLITION
 - 2. Section 32 10 00 – BASES, BALLASTS, AND PAVING
 - 3. Section 32 17 00 – PAVING SPECIALTIES

PART 2 – PRODUCTS

2.01 GRANITE CURB TYPE VB - STRAIGHT

- A. Products used shall meet the requirements of Section 500 of the Standard Specifications.

2.02 GRANITE CURB TYPE VB - CURVED

- A. Products used shall meet the requirements of Section 500 of the Standard Specifications.

2.03 GRANITE TRANSITION CURB FOR PEDESTRIAN CURB RAMPS - STRAIGHT

- A. Products used shall meet the requirements of Section 500 of the Standard Specifications.

2.04 GRANITE TRANSITION CURB FOR PEDESTRIAN CURB RAMPS - CURVED

- A. Products used shall meet the requirements of Section 500 of the Standard Specifications.

2.05 CURB REMOVED AND RESET

- A. Products used shall meet the requirements of Section 580 of the Standard Specifications unless otherwise noted on the Plans.

PART 3 – EXECUTION

3.01 GRANITE CURB TYPE VB - STRAIGHT

- A. Methods of execution used shall meet the requirements of Section 500 of the Standard Specifications.

3.02 GRANITE CURB TYPE VB - CURVED

- A. Methods of execution used shall meet the requirements of Section 500 of the Standard Specifications.

3.03 GRANITE TRANSITION CURB FOR PEDESTRIAN CURB RAMPS - STRAIGHT

- A. Methods of execution used shall meet the requirements of Section 500 of the Standard Specifications.

3.04 GRANITE TRANSITION CURB FOR PEDESTRIAN CURB RAMPS - CURVED

- A. Methods of execution used shall meet the requirements of Section 500 of the Standard Specifications.

3.05 CURB REMOVED AND RESET

- A. Methods of execution used shall meet the requirements of Section 580 of the Standard Specifications.

3.06 CURB REMOVED AND DISCARDED

- A. Methods of execution used shall meet the requirements of Section 580 of the Standard Specifications.

PART 4 – COMPENSATION

4.01 MEASUREMENT

- A. Measurement of items shall be in accordance with Sections 500 and 580 of the Standard Specifications.

4.02 PAYMENT

- A. Payment of items shall be in accordance with Sections 500 and 580 of the Standard Specifications.

4.03 PAYMENT ITEMS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
32 16 00.01	GRANITE CURB TYPE VB - STRAIGHT	FOOT
32 16 00.02	GRANITE CURB TYPE VB – CURVED	FOOT
32 16 00.03	GRANITE TRANSITION CURB FOR PEDESTRIAN CURB RAMPS - STRAIGHT	FOOT
32 16 00.04	GRANITE TRANSITION CURB FOR PEDESTRIAN CURB RAMPS - CURVED	FOOT
32 16 00.05	CURB REMOVED AND RESET	FOOT
32 16 00.06	CURB REMOVED AND DISCARDED	FOOT

END OF SECTION

SECTION 32 17 00

PAVING SPECIALTIES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Include GENERAL CONDITIONS and all parts of Division 1 as part of this Section.
- B. Examine all other Sections of the specifications for requirements which affect Work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under the Contract.
- D. The work shall conform to the relevant provisions of the Commonwealth of Massachusetts Department of Transportation (MassDOT) Standard Specifications for Highways and Bridges 2024 Edition and the Supplemental Specifications and the 2009 Manual of Uniform Traffic Control Devices (MUTCD), as amended.

1.02 SUMMARY

- A. This Section specifies requirements for the following types of work and related items, but is not limited to:
 - 1. Furnishing and installing warning and regulatory signs at the locations shown on the plans or as required by the Engineer.
 - 2. Removing existing pavement markings as required by the Engineer.
 - 3. Furnishing materials and application of painted and reflectorized thermoplastic pavement markings, at the locations shown on the plans and as required by the Engineer.
 - 4. Furnishing, deploying, maintaining in proper operating conditions, and removing temporary pedestrian barricades and temporary pedestrian ramps as part of a Temporary Pedestrian Access Route (TPAR) in order to guide pedestrians around a fully- or partially-closed sidewalk. These devices are intended to prevent pedestrians from entering the work area and to prevent pedestrians from inadvertently entering the vehicle travel lane by providing visual and physical separation between each space.

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- 1. Section 03 30 00 – CAST IN PLACE CONCRETE
- 2. Section 32 10 00 – BASES, BALLASTS, AND PAVING

3. Section 32 16 00 – CURBS AND GUTTERS

PART 2 - PRODUCTS

2.01 WARNING-REGULATORY AND ROUTE MARKER – ALUMINUM PANEL
(TYPE A)

- A. Products used shall meet the requirements of Section 828 of the Standard Specifications unless otherwise noted on the Plans.

2.02 SIGN SUP (N/GUIDE)+RTE MKR W/1 BRKWAY POST ASSEMBLY – STEEL

- A. Products used shall meet the requirements of Section 840 of the Standard Specifications.

2.03 SAFETY SIGNING FOR TRAFFIC MANAGEMENT

- A. Products used shall meet the requirements of Section 850 of the Standard Specifications.

2.04 TEMPORARY PEDESTRIAN BARRICADE

- A. The Temporary Pedestrian Barricade shall have a continuous bottom rail or edge no more than two (2) inches above the ground and eight (8) inches in height (minimum) to accommodate cane users, have a smooth and continuous hand railing along the top edge no less than 32 inches above the ground and not obstruct or project into the pedestrian path of travel. Barricade walls shall be nearly vertical and generally within the same plane.
- B. If exposed to traffic, Temporary Pedestrian Barricades shall be crashworthy.

2.05 TEMPORARY PEDESTRIAN CURB RAMP

- A. The Temporary Pedestrian Curb Ramp shall provide a 48 inch minimum width, with a firm, stable, and non-slip surface. Protective edging with a two (2) inch minimum height shall be installed when the curb ramp or landing platform has a vertical drop of six (6) inches or greater. The Temporary Pedestrian Curb Ramp walkway and landing area surface shall be of a solid, continuous, contrasting color abutting up to the existing sidewalk.
- B. If a Temporary Pedestrian Curb Ramp leads to a crosswalk, a detectable warning pad must be used at the base of the ramp; if it leads to a protected path that does not conflict with vehicular traffic then a detectable pad shall not be used.

2.06 PORTABLE BREAKAWAY BARRICADE TYPE III

- A. Products used shall meet the requirements of Section 850 of the Standard Specifications.

2.07 PAVEMENT MARKING REMOVAL

- A. Products used shall meet the requirements of Section 850 of the Standard Specifications.

2.08 ARROW BOARD

- A. Products used shall meet the requirements of Section 850 of the Standard Specifications.

2.09 REFLECTORIZED DRUM

- A. Products used shall meet the requirements of Section 850 of the Standard Specifications.

2.10 12 INCH REFLECTORIZED WHITE LINE (PAINTED)

- A. Products used shall meet the requirements of Section 860 of the Standard Specifications.

2.11 4 INCH REFLECTORIZED YELLOW LINE (PAINTED)

- A. Products used shall meet the requirements of Section 860 of the Standard Specifications and the following:
Pavement marking width shall be 4 inches.

2.12 PAVEMENT LEGEND REFLECTORIZED WHITE (PAINTED)

- A. Products used shall meet the requirements of Section 860 of the Standard Specifications.

2.13 PAVEMENT ARROWS AND LEGENDS REFLECTORIZED WHITE (THERMOPLASTIC)

- A. Products used shall meet the requirements of Section 860 of the Standard Specifications.

2.14 PAVEMENT ARROWS AND LEGENDS REFLECTORIZED BLUE (THERMOPLASTIC)

- A. Products used shall meet the requirements of Section 860 of the Standard Specifications.
- B. Background paint for the accessible parking space markings shall be blue in the dimensions and at locations shown on the Contract Drawings.

2.15 6 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)

- A. Products used shall meet the requirements of Section 860 of the Standard Specifications.

2.16 12 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)

- A. Products used shall meet the requirements of Section 860 of the Standard Specifications.

2.17 MISCELLANEOUS SIGN REMOVED AND RESET

- A. Products used shall be the existing signs and supports. If in the opinion of the Engineer, the existing sign panel is unsuitable for reuse, a new sign panel of a size and composition equal to the existing sign panel shall be furnished, as required by the Engineer. The hardware used to attach the sign panel to the new or existing sign support shall be the existing bolts, brackets or clamps, or new and equal quality equipment furnished by the Contractor, as directed by the Engineer.

PART 3 - EXECUTION

3.01 WARNING-REGULATORY AND ROUTE MARKER – ALUMINUM PANEL (TYPE A)

- A. Methods of execution used shall meet the requirements of Section 828 of the Standard Specifications.

3.02 SIGN SUP (N/GUIDE)+RTE MKR W/1 BRKWAY POST ASSEMBLY – STEEL

- A. Methods of execution used shall meet the requirements of Section 840 of the Standard Specifications.

3.03 SAFETY SIGNING FOR TRAFFIC MANAGEMENT

- A. Methods of execution used shall meet the requirements of Section 850 of the Standard Specifications.

3.04 TEMPORARY PEDESTRIAN BARRICADE

- A. The Temporary Pedestrian Barricade shall be placed in an area that will provide pedestrians with a Temporary Pedestrian Access Route on a smooth, continuous hard surface for its entirety. The geometry and alignment of the facility shall meet the applicable requirements of the “Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities” and the Massachusetts Architectural Access Board.
- B. The recommended width of the Temporary Pedestrian Barricade is 60 inches, but if constraints exist a minimum clear width of 48 inches shall be provided along its entirety. If a 60-inch width cannot be accommodated in full, a 60 inch by 60 inch passing space shall be provided every 200 feet or less along the Temporary Pedestrian Access Route.

- C. Turning areas shall be 60 inches by 60 inches minimum.
- D. Lateral joints between any surfaces shall not exceed 0.5 inches. Lateral edges may be vertical up to 0.25 inches high and shall be beveled at 1V:2H between 0.25 inches and 0.5 inches.
- E. The Temporary Pedestrian Access Route shall be kept clear of debris, snow, and ice and the Temporary Pedestrian Barricade shall not obstruct drainage.

3.05 TEMPORARY PEDESTRIAN CURB RAMP

- A. The Temporary Pedestrian Curb Ramp shall be placed in an area that will provide pedestrians with a Temporary Pedestrian Access Route on a smooth, continuous hard surface for its entirety. The geometry and alignment of the facility shall meet the applicable requirements of the “Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities” and the Massachusetts Architectural Access Board.
- B. The recommended width of the Temporary Pedestrian Access Route is 60 inches, but if constraints exist a minimum clear width of 48 inches shall be provided along its entirety. If a 60-inch width cannot be accommodated in full, a 60 inch by 60 inch passing space shall be provided every 200 feet or less along the Temporary Pedestrian Access Route.
- C. Turning areas shall be 60 inches by 60 inches minimum.
- D. Lateral joints between any surfaces shall not exceed 0.5 inches. Lateral edges may be vertical up to 0.25 inches high and shall be beveled at 1V:2H between 0.25 inches and 0.5 inches.
- E. The Temporary Pedestrian Access Route shall be kept clear of debris, snow, and ice and the Temporary Pedestrian Curb Ramps shall not obstruct drainage.

3.06 PORTABLE BREAKAWAY BARRICADE TYPE III

- A. Methods of execution used shall meet the requirements of Section 850 of the Standard Specifications.

3.07 PAVEMENT MARKING REMOVAL

- A. Methods of execution used shall meet the requirements of Section 850 of the Standard Specifications.

3.08 ARROW BOARD

- A. Methods of execution used shall meet the requirements of Section 850 of the Standard Specifications.

3.09 REFLECTORIZED DRUM

- A. Methods of execution used shall meet the requirements of Section 850 of the Standard Specifications.
- 3.10 12 INCH REFLECTORIZED WHITE LINE (PAINTED)
- A. Methods of execution used shall meet the requirements of Section 860 of the Standard Specifications.
- 3.11 4 INCH REFLECTORIZED YELLOW LINE (PAINTED)
- A. Methods of execution used shall meet the requirements of Section 860 of the Standard Specifications and the following:

Pavement marking width shall be 4 inches.
- 3.12 PAVEMENT LEGEND REFLECTORIZED. WHITE (PAINTED)
- A. Methods of execution used shall meet the requirements of Section 850 of the Standard Specifications.
- 3.13 PAVEMENT ARROWS AND LEGENDS REFLECTORIZED WHITE (THERMOPLASTIC)
- A. Products used shall meet the requirements of Section 860 of the Standard Specifications.
- 3.14 PAVEMENT ARROWS AND LEGENDS REFLECTORIZED BLUE (THERMOPLASTIC)
- A. Methods of execution used shall meet the requirements of Section 850 of the Standard Specifications.
- 3.15 6 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)
- A. Methods of execution shall meet the requirements of Section 860 of the Standard Specifications.
- 3.16 12 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)
- A. Methods of execution used shall meet the requirements of Section 860 of the Standard Specifications.
- 3.17 MISCELLANEOUS SIGN REMOVED AND RESET
- A. The work under this item shall be in accordance with the relevant provisions of Section 800 of the Standard Specifications. Sign panels to be removed and reset shall be cleaned before being remounted on new or existing sign supports. The Contractor shall replace at their own expense all sign panels or sign supports that are damaged or lost either directly or indirectly as a result of carelessness.

PART 4 - COMPENSATION

4.01 MEASUREMENT

- A. Measurement of items shall be in accordance with Section 828, 840, 850, and 860 of the Standard Specifications unless otherwise stated below.
- B. Measurement for TEMPORARY PEDESTRIAN BARRICADE shall be per FOOT (FT) of barricade complete in place.
- C. Measurement for TEMPORARY PEDESTRIAN CURB RAMP shall be per EACH (EA) curb ramp complete in place.
- D. Measurement for MISCELLANEOUS SIGN REMOVED AND RESET will be made on a per EACH (EA) basis in conformance with the Contract Drawings.

4.02 PAYMENT

- A. Payment of items shall be in accordance with applicable Sections 828, 840, 850, and 860 of the Standard Specifications unless otherwise stated below.
- B. Payment for TEMPORARY PEDESTRIAN BARRICADE shall be per FOOT (FT) at the contract price. This price shall include all labor, equipment, materials, to furnish, install, maintain, dismantle, remove, and all incidental costs required to complete the work.
- C. Payment for TEMPORARY PEDESTRIAN CURB RAMP shall be per EACH (EA) curb ramp at the contract price. This price shall include all lab labor, equipment, materials, to furnish, install, maintain, dismantle, remove, and all incidental costs required to complete the work.
- D. Payment for MISCELLANEOUS SIGN REMOVED AND RESET shall be at the per EACH (EA) contract price. This price shall include full compensation for all labor, materials, tools, and equipment, and all other incidental work necessary to complete the work of this item as indicated on the Contract Drawings and as herein specified. It shall also include all necessary mounting fixtures (nuts, bolts and other miscellaneous items) to complete the work.

4.03 PAYMENT ITEMS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
32 17 00.01	WARNING-REGULATORY AND ROUTE MARKER - ALUMINUM PANEL (TYPE A)	SQUARE FOOT
32 17 00.02	SIGN SUP (N/GUIDE)+RTE MKR W/1 BRKWAY POST ASSEMBLY – STEEL	EACH
32 17 00.03	SAFETY SIGNING FOR TRAFFIC MANAGEMENT	SQUARE FOOT

32 17 00.04	TEMPORARY PEDESTRIAN BARRICADE	FOOT
32 17 00.05	TEMPORARY PEDESTRIAN CURB RAMP	FOOT
32 17 00.06	PORTABLE BREAKAWAY BARRICADE TYPE III	EACH
32 17 00.07	PAVEMENT MARKING REMOVAL	SQUARE FOOT
32 17 00.08	ARROW BOARD	DAY
32 17 00.09	REFLECTORIZED DRUM	DAY
32 17 00.10	12 INCH REFLECTORIZED WHITE LINE (PAINTED)	FOOT
32 17 00.11	4 INCH REFLECTORIZED YELLOW LINE (PAINTED)	FOOT
32 17 00.12	PAVEMENT LEGEND REFLECTORIZED WHITE (PAINTED)	SQUARE FOOT
32 17 00.13	PAVEMENT ARROWS AND LEGENDS REFLECTORIZED WHITE (THERMOPLASTIC)	SQUARE FOOT
32 17 00.14	PAVEMENT ARROWS AND LEGENDS REFLECTORIZED BLUE (THERMOPLASTIC)	SQUARE FOOT
32 17 00.15	6 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)	FOOT
32 17 00.16	12 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)	FOOT
32 17 00.17	MISCELLANEOUS SIGN REMOVED AND RESET	FOOT

END OF SECTION

SECTION 32 30 00
SITE IMPROVEMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Include GENERAL CONDITIONS and all parts of Division 1 as part of this Section.
- B. Examine all other Sections of the specifications for requirements which affect the Work of this Section whether such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by the Work of this Section. Cooperate with such trades to assure the steady progress of all Work under the Contract.

1.02 SUMMARY

- A. The work of this Section consists of all site improvements and related items as indicated on the Drawings and/or as specified herein, and includes, but is not limited to, the following:
 - 1. Granite Seat Wall
 - 2. Granite Marker
 - 3. Granite Paving
 - 4. Interpretive Sign
 - 5. Trailhead Sign
 - 6. Split Rail Fence
 - 7. Wood Guardrail

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. The following related work is to be performed under the designated SECTIONS:
 - 1. Section 31 00 00 – EARTHWORK
 - 2. Section 32 33 00 – SITE FURNISHINGS
 - 3. Section 32 90 00 – PLANTING AND LAWNS
 - 4. Section 03 30 00 – CAST IN PLACE CONCRETE

1.04 REFERENCES AND STANDARDS

- A. Except as modified by governing codes and by the Contract Documents, comply with applicable provisions and recommendations of the following:
1. MassDOT: "Standard Specifications for Highways and Bridges", Massachusetts Department of Transportation (formerly Massachusetts Highway Dept. and Massachusetts Department of Public Works), Commonwealth of Massachusetts, latest edition and all Supplements.
 2. ASSHTO: American Association of State Highway and Transportation Officials, latest edition.
 3. ASTM International: American Society for Testing and Materials International, latest edition:
 - a. A27: Steel Castings, Carbon, for General Application
 - b. A36: Structural Steel
 - c. A53: Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
 - d. A123: Zinc (Hot-Galvanized) Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars, and Strips
 - e. A153: Zinc Coating (Hot-Dip) on Iron and Steel Hardware
 - f. A386: Zinc Coating (Hot-Dip) on Assembled Steel Products
 - g. D1761-06: Standard Test Methods for Mechanical Fasteners in Wood
 - h. D245-06: Standards of Wood Structural Properties
 - i. A 536: Standard Specification for Ductile Iron Castings.
 - j. B 117: Standard Practice for Operating Salt Spray (Fog) Apparatus.
 - k. D 522: Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings.
 - l. D 523: Standard Test Method for Specular Gloss.
 - m. D 2247: Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
 - n. D 2794: Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).

- o. D 3359: Standard Test Methods for Measuring Adhesion by Tape Test.
 - p. D 3363: Standard Test Method for Film Hardness by Pencil Test.
 - q. G 155: Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.
4. ISO Testing Standards:
- a. ISO 1520: Paints and Varnishes – Cupping Test.
 - b. ISO 2815: Paints and Varnishes – Buchholz Indentation Test.
5. LFI Testing Standards:
- a. LFI PT-019: Standard Test for Strength and Durability
6. MUTCD: Manual on Uniform Traffic Control Devices, latest edition:
- a. HC Parking, Van Accessible Parking, Crosswalk Warning Signs
- B. Metal Materials and Construction Methods:
- 1. Workmanship and finish shall be equal to the best practice of modern shops for each item of work. Exposed surfaces shall have smooth finish and sharp, well-defined lines and arises. Sections shall be well formed to shape and size with sharp lines and angles; curved work shall be sprung evenly to dimensioned radii curves. Casting shall have sharp corners and edges, and shall be clean, smooth, and true to pattern. Welding shall be in accordance with the Welding Code of the American Welding Society. All welding, except as otherwise indicated, shall extend the entire length of joints. All welded face joints shall be ground flush and smooth. All welds shall be watertight. Ornamental metalwork shall be cut, drilled, countersunk, and tapped as required for the attachment of other work where shown on the drawings or when instructions for such work are given on the shop drawings. Ornamental metalwork to be built in with concrete or masonry shall be of the form required for anchorage or shall be provided with suitable anchors or expansion shields.
 - 2. All metal fabrication shall be accomplished using the highest standards of workmanship. Individual steel pieces shall be saw cut and carefully fit together. All connections shall be fully welded and ground flush and smooth. All fabricated steel items shall be fine sanded throughout to produce a high standard of surfaces and connections shall be without visible grinding marks, surface differentiation or variation.
 - 3. All material that is specified to be galvanized shall be hot-dipped galvanized after fabrication.

4. Galvanized surfaces damaged by welding or other causes shall be wire brushed to remove all loose or cracked zinc coating and re-galvanized with a 95 percent zinc cold galvanizing coating prior to finishing.

1.05 QUALIFICATIONS

- A. The exterior work shall be performed by a firm having a minimum of five (5) years acceptable experience in the installation of materials specified on projects comparable to this project.
- B. Contractor shall submit verification to the Landscape Architect, which states that all proposed manufacturers have produced products of a similar nature and quality to that which is specified and that each manufacturer is capable of producing the quantity required by the contract within the time allocated in the project schedule.

1.06 SUBMITTALS - GENERAL

- A. Prior to ordering materials, submit information to Landscape Architect for approval as follows. Do not order materials until Landscape Architect's approval has been obtained. Delivered materials shall closely match the approved shop drawings.
- B. Contractor shall submit complete shop drawings of each custom fabricated item as follows. Include dimensioned drawings and schedules of all components with dimensions verified in the field where appropriate. Resubmit all shop drawings as many times as necessary for approval before fabrication. Coordinate other trades as required.
- C. **All signage details shall be fabricated to match existing signage package as built on Phase 1 trail in Leominster, Contractor is responsible for verifying the as built materials of existing signage. Coordination of any discrepancy between as built signage and the materials specified herein shall be made with Landscape Architect during shop drawing review process.**

1.07 SUBMITTALS – MANUFACTURER'S LITERATURE

- A. Submit manufacturer's material descriptions, product data, color charts with specific finishes, and installation instructions for the following items:
 1. Granite Seat Wall
 2. Granite Marker
 3. Granite Paving
 4. Interpretive Sign
 5. Trailhead Sign
 6. Split Rail Fence
 7. Wood Guardrail

1.08 SUBMITTALS - SHOP DRAWINGS

- A. Submit dimensioned shop drawings for materials, material sizes, design, layout, and installation for review and approval of the following:
1. Granite Seat Walls, Granite Marker, Granite Paving: Dimensioned shop drawings shall include plans, sections, and details to show all materials, layout, dimensions, openings, cuts, base and setting materials, holes with infill material.
 2. Interpretive Sign, Trailhead Sign: Dimensioned shop drawings showing frames, sign boards, foundations, attachments, size and thickness of each member, type of material, method of connection and assembly, fabrication and erection tolerances for all connections, cuts, holes, bolts, welds, galvanizing and finishing, anchoring and footings, and relation to finished grade along bottom of item.
 3. **Graphic design files of all signs will be provided by Landscape Architect in digital form to contractor for sign manufacturer's use.**
 4. Shop drawing layout for all graphic artwork for Interpretive Sign shall be full size color representations of the graphic signage designs as provided by the Landscape Architect.
 5. Wood Guardrail and Split Rail Fence: Dimensioned shop drawings shall include plans, sections, and details to show all materials, layout and dimensions.

1.09 SUBMITTALS - SAMPLES

1. Granite: One (1) 6" x 6" x 3/4" sample of all new granite types and finishes.
2. Granite Marker: One (1) 8" x 8" x 1/4" sample of stainless-steel corner panel showing laser cut and painted lettering and graphics.
3. Interpretive Sign Panel: One (1) 6" x 6" x 1/4" laminate panel showing approved graphic.
4. Interpretive Sign Frame: One (1) 8" x 24" x 3/8" stainless steel portion showing bent top detailing.
5. Trailhead Sign: One (1) 12"x18" x 3/16" panel with approved lettering and graphics.
6. Trailhead Sign Frame: One (1) 6" x 6" x 1/4" stainless steel portion.

1.10 SUBMITTALS - CLOSE OUT

1. Contractor to provide (2) binder copies of an Operations and Maintenance Manual including all warranty documents for all site improvements to the City of Leominster.

1.11 MOCK-UPS

- A. Provide the following types of mock-ups. Mock-ups shall show the proposed complete fabrication of indicated site improvement, including but not limited to all hardware, fastenings, coatings, and finishes.
 - 1. One (1) section of Granite Seat Wall
 - 2. One (1) Granite Marker
 - 3. One (1) 12' x 12' section of Granite Paving
 - 4. One (1) complete Interpretive Sign
 - 5. One (1) complete Trailhead Sign
- B. Replace sample installation as many times as necessary until approved by Landscape Architect.
- C. Construct all subsequent work to match approved mockup. Approved mockups may become part of the completed work if located in final locations for that item as shown, located and oriented as on the Drawings.

1.12 QUALIFICATIONS OF MANUFACTURERS AND FABRICATORS

- A. Welders shall be certified and shall have passed the AWS Qualification Test within the past 12 months.
- B. All metal work and coatings shall be fabricated and applied in the shop under environmental and job conditions required by Specifications.
- C. Welding: Perform welding in conformance with AWS D1.1 - AWS D1.4, as applicable.
- D. Fabricator Qualifications: Fabricator shall have a minimum of five years' experience in successfully producing metal fabrications similar to that specified in comparable projects. Welders shall be certified and shall have passed the AWS Qualification Test within the past 12 months.
- E. Metal Fabricator shall have a minimum of five years' experience in successfully producing metal fabrications similar to the specified items in comparable projects.

1.13 QUALITY ASSURANCE FOR ALL NON-METAL WORK

- A. Contractor shall have at least five (5) years of experience in Landscape Work similar in materials, design, and extent to that indicated for this project and with a record of successful landscape establishment. Installer shall maintain an experienced supervisor on the project site during all times that landscape construction is in progress. Provide written qualification data for firms and persons to be responsible for Work, to demonstrate their capabilities and experience. Include lists of completed projects, with project names, addresses, phone numbers, and names and address of Landscape Architect or Engineers and clients.

- B. Contractor shall conduct pre-landscape construction conference at Project site as directed by the Landscape Architect, to review landscape construction procedures, site conditions, and submittal requirements required in the Work of this Section, before any products are submitted for review and approval, or landscape construction commences.

1.14 PRODUCT HANDLING AND STORAGE

- A. Deliver site improvements in original sealed containers marked with name of manufacturer and identification of contents. After delivery, store materials under waterproof covers on planking clear of ground and protect from handling damage, dirt, stains, water and wind.
- B. Take all necessary precautions to protect all items from moisture, chipping, cracking, or other damage, during the transportation of these materials to the awarded contractor, unloading and storage at yard or site. After delivery take all necessary precautions to prevent all items from chipping, cracking, construction dust and debris, or damage of any kind. Damaged units will not be allowed to be installed, and should any damaged units be found in constructed work, such units shall be removed immediately and replaced with new units, and the Contractor shall assume all expenses incurred.
- C. Stored materials shall be adequately protected against moisture by (1) stacking in such a manner as to allow a complete circulation of air under each stack, and (2) covering each stack, top and sides with a waterproof paper or membrane. Coverings shall remain in place at all times, when not working from the particular stack.

1.15 STRUCTURAL PERFORMANCE

- A. Provide completed assemblies which, when installed, comply with the following minimum requirements for structural performance without exceeding the allowable design working stress of the materials involved, including anchors and connections. Apply each load to produce the maximum stress in each respective component of each metal fabrication and record testing data.
 - 1. All Signs shall be capable of withstanding uniform side loads of 50 pounds per linear foot without compromising post anchorage. Signs shall also be capable of withstanding concentrated side loads of 200 pounds applied at any point, non-concurrently.
 - 2. Sign panels and base attachments for all signs shall withstand wind load requirements per Massachusetts Building Code article CMR 780.1611.0 for Exposure B, Zone 2 (Leominster, MA), and article CMR 780.1611.12.2.

1.16 WARRANTY

- A. Warranty Information for all site improvements:
 - 1. Products will be free from defects in material and/or workmanship for a period of three years from the date of final acceptance.

2. The warranty does not apply to damage resulting from accident, alteration, misuse, tampering, negligence, or abuse.
3. The Manufacturer shall, at its option, repair, replace, or refund the purchase price of any items found defective upon inspection by an authorized Manufacturer service representative.

PART 2 - PRODUCTS

2.01 GRANITE FOR GRANITE SEAT WALL, GRANITE MARKER, GRANITE PAVING

- A. Granite shall conform to the grain size, pattern and color range of “Englishman’s Bay” granite, as provided by J.C. Stone, Inc., 539 Rockland Road, Jefferson, ME 04348, (207) 549-4729, www.jcstoneinc.com or approved comparable, color and performance matched equal. Other granites of same shade and grain size and patterning may be submitted by the Contractor for use only after review and acceptance of the color, grain pattern, and ASTM testing results by the Engineer. Any submitted granite shall meet the overall requirements for new granite specified herein and be acceptable to the Engineer.
- B. Granite for Granite Seat Walls shall be saw cut to the dimensions shown on the Contract Drawings with the exposed faces to have a Thermal finish as shown on the Contract Drawings. Where shown on the Contract Drawings, core holes for bench posts shall be drilled. Benches shall be inset into granite and secured as required on Contract Drawings.
- C. Granite Posts for Granite Markers shall be cut to the dimensions shown on the Contract Drawings with the exposed faces to have a Thermal finish with eased edges as shown on the Contract Drawings. Fabrication shall accommodate the installation of stainless steel logo elements as shown on Contract Drawings. Stainless Steel logo elements shall be inset flush with lettering and logo into granite and secured as required on Contract Drawings.
- D. Granite for Granite Paving shall be sawn to the dimensions shown on the Contract Drawings with the exposed faces to have a Thermal finish on top and sawn edges and bottom. Thickness of pavers shall be gauged to dimension shown on contract documents.
- E. Granite color and grain shall be medium to fine grain, free from damage, visible blemishes not typical for approved samples (natural to the stone or caused during delivery, storage, or construction), errant color and iron stains, deposits or seams, and shall match samples approved by the Landscape Architect. Rust stains from natural cleft deposits or seams that appear after installation and before Final Acceptance may be cause for rejection and replacement of stone at Contractor's expense. Granite appearance, as specified on the Contract Drawings, specified herein, and exhibited in approved sample submittals shall be consistent throughout the Project.
- F. Granite Paving Setting Bed for pavers on concrete base shall be 1:4 proportion of Latex Modified Dry Mortar: Crushed Stone Fines, compacted and well misted, similar to products formulated by Laticrete.

- G. Granite Paving Joints shall be polymeric joint sand in a color approved by Landscape Architect via submittal review prior to construction.

2.02 METAL MATERIALS FOR INTERPRETIVE SIGN AND TRAILHEAD SIGN

- A. All metal used in the fabrication and installation of the metal Site Improvements of this Section shall conform to the following specifications:
 1. Milled Stainless Steel Sheet, Tube and Flat Bar Stock: shall be in conformance to ASTM A36. Type 316. Match to dimensions of existing, as shown on the Drawings, or as finalized in shop drawing structural calculations.
 2. Stainless Steel anchor bolts, elements and hardware shall conform to Type 316.
 3. Miscellaneous Bolts, Screws, and Fasteners: ASTM A307 (smaller than 5/8") and ASTM A325 (greater than 5/8").
 4. Stainless Steel bolts, pins, plates, and hardware shall conform to ASTM A666, be AISI Type 305 conforming to the requirements of ASTM A193 to sizes shown on the Drawings.
 5. Bolts and Nuts: Regular hexagonal head extending 1/2" min. beyond nut when tight.
 6. Plain Washers: Round.
 7. All fasteners to be Stainless Steel and vandal resistant.
 8. Provide labels to each piece or panel to facilitate field assembly. Assemble the metal panels and railings as much as possible in the Shop with minimum field assembly required.

2.03 INTERPRETIVE SIGN

- A. Custom High Pressure Laminate Signs for the Interpretive Signs shall be manufactured by Izone Imaging, 2526 Charter Oak Drive, Suite 100, Temple, TX, 76502, 888-464-9663, www.izoneimaging.com, or comparable, compatible, color, and performance matched equal as approved by Landscape Architect.
- B. Interpretive sign dimensions, details, materials, message content, and design of signage shall be as shown on the Drawings and graphics provided by the Landscape Architect.
- C. Interpretive sign panel shall be fabricated from 1/2" thickness, structural high-pressure laminate. Panels shall be sturdy weatherproof, vandal proof, and graffiti resistant. Sign panels are single sided.
- D. Sign graphics shall be inkjet printed with multicolor graphics sandwiched between multiple layers of melamine and phenolic sheets pressed at high pressure and heated to form a solid core.

- E. The contractor shall provide all final artwork in shop drawings and samples based on digital graphic files for each panel provided by the Landscape Architect.
- F. Constructed artwork layout, size, fonts, and text content shall reflect approved shop drawings and approved samples.

2.04 TRAILHEAD SIGN

- A. Trailhead sign panel shall be 3/16" SS plate with applied color printed graphic film with overlamine.
- B. Color printed graphics shall be inkjet printed on 3.5-mil thickness satin white high tensile PVC film with aggressive, permanent pressure sensitive adhesive. Film shall be DPF 8000 Ultra Tack manufactured by Arlon, 200 Boysenberry Lane, Placentia, CA 92870, 800-232-7161, www.arlon.com, or comparable, compatible, color, and performance matched equal as approved by Landscape Architect.
- C. Overlamine shall be 2-mil cast vinyl film with clear, permanent pressure sensitive adhesive with 1.5 to 10 gloss units Matte surface finish. Film shall be Series 3220 Overlamine manufactured by Arlon, 200 Boysenberry Lane, Placentia, CA 92870, 800-232-7161, www.arlon.com, or comparable, compatible, color, and performance matched equal as approved by Landscape Architect.

2.05 SPLIT RAIL FENCE

- A. Wood posts and rails shall be sawn structural lumber made of Northern White Cedar or equivalent as approved by the Engineer.
- B. All fence posts shall be treated with a waterborne wood preservative suitable for the intended use. The preservative shall be applied to all sides of the posts and extending for a minimum distance of 32" from the bottom of the post. Rails and posts shall be cut to length. Holes for rails shall be pre-cut.
- C. Fence sections shall be 10' – 0" in length with sawn posts and rails. Fences shall be 54" exposed height with three rails per section centered at 16" above grade (bottom rail), 32" above grade (middle rail) and 48" above grade (top rail).

2.06 WOOD GUARDRAIL

- A. All timber posts and rail components shall conform with the following:
 - 1. Commercial lumber grade No. 1 or better after treatment;
 - 2. AASHTO M 133;
 - 3. All timber shall be Southern Yellow Pine, seasoned and pressure treated as specified herein. Posts shall be square with nominal dimensions as indicated on the Plans, surfaced four sides (S4S) and shall conform to the requirements of the "Standard Grading Rules for Southern Yellow Pine" of the Southern Products Association. Variations in the size of any dimension shall not be more than + 1/4"

4. All timber components shall be pressure treated with waterborne preservative according to requirements of AWPA U1. Use Category UC3b for exterior construction not in contact with the ground and Category UC4a for items in contact with the ground.
 5. Do not use preservative chemicals containing arsenic or chromium. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not contain colorants, bleed through, or otherwise adversely affect finishes;
 6. All timber components shall be fabricated (including but not necessarily limited to cutting, drilling, dapping and chamfering) prior to treatment.
 7. Use a process that includes water-repellent treatment.
 8. After treatment, redry materials using a Kiln or air dry to a maximum moisture content of 19%;
 9. Mark treated materials with treatment quality mark of an inspection agency certified by the American Lumber Standard Committee's (ALSC) Board of Review.
 10. Pressure treated wood shall be marked in accordance with AASHTO M133 standards.
 11. Round head bolts including nuts and washers shall be sized as indicated and hot dipped galvanized
 12. Damaged post and rail elements will not be accepted.
- B. Round head bolts including nuts and washers shall be manufactured in accordance with ASTM A307 Grade A specifications. All round head bolts including nuts and washers shall be hot-dipped galvanized in accordance with ASTM A153 Class C.
- 2.07 BASE COURSE
- A. Gravel Borrow 'Type B' shall meet the requirements as specified in Section 31 00 00 – EARTHWORK.
- 2.08 CONCRETE FOOTINGS
- A. All concrete footings shall be minimum 3,500 PSI at 28 days to the dimensions indicated on the Drawings and shall meet the requirements as specified in Section 03 30 00 CAST IN PLACE CONCRETE.
- 2.09 NON-SHRINK GROUT
- A. Non-shrink grout for all site improvements base plates, footing settings and anchor bolts shall conform to requirements of ASTM C11077, Grade B or C. Unless otherwise indicated, requirements for consistency, working time and temperature range shall be determined by the Contractor to suit working conditions.

2.10 CLAY WATERPROOFING LAYER

- A. Clay waterproofing layer shall be Volclay Waterstop RX-101 as manufactured by Allco Waterproofing Solutions, LTD.

2.11 PVC AND FILTER FABRIC GRANITE PAVING WEEP HOLES

- A. Provide 4" diameter schedule 40 PVC weeps, as shown on Contract Drawings. Weeps shall be placed on grid located at 6' feet on center and filled with clean drainage stone to provide sub drainage through bituminous base. Cover top of each PCV weep with filter fabric prior to placing setting bed sand.
- B. Filter Fabric shall be Filter Fabric shall be a non-woven polypropylene fabric equal to Mirafi 140N, manufactured by Mirafi, Inc., Charlotte, NC 28224, or approved equal.

PART 3 - EXECUTION

3.01 EXCAVATION

- A. Contractor shall excavate to the lines and grades shown on the project grading plans. Contractor shall take precautions to minimize over-excavation. Over-excavation shall be filled with specified and approved compacted infill material as reviewed by the Landscape Architect or Engineer.
- B. Contractor shall verify location of existing structures and utilities prior to excavation and to contact DIGSAFE before construction. Contractor shall ensure all surrounding structures are protected from the effects of excavation. Excavation support, if required, is the responsibility of the Contractor.

3.02 GENERAL

- A. Coordinate and furnish anchorage devices, setting drawings, diagrams, templates, instructions, and directions for installation of concrete inserts, sleeves, anchor bolts and miscellaneous items to be embedded or attached to concrete work, masonry work or structural steel work.
- B. Erect work square, plumb, and true, unless otherwise shown on the Drawings, accurately fitted and with tight joints and intersections. All anchors, inserts and other members to be set in concrete or masonry shall be furnished loose by this trade to be built-into concrete and masonry by those trades. Avoid field cutting or drilling to the greatest extent possible.
- C. Brace work rigid and secure to surrounding construction. Provide temporary bracing or anchors where required. Protect materials and adjacent existing site improvements during construction. Protection may include but not be limited to: wrapping for protection during erection and/or storage with approved materials, erecting plywood barriers, anti-sway cabling and ropes, protection from the weather and vandalism.

- D. Fit exposed connections accurately together to form hairline joints. Shop weld connections, except when work cannot be shop welded due to shipping size or galvanizing limitations.
- E. Examine all surfaces and contiguous elements to receive Work of this and related Sections report to the Landscape Architect or Engineer any defect or anomaly that may affect the Work and correct, as part of the Work of this Contract, any defects that may affect installation. Commencement of work will be construed as complete acceptability of base surfaces and contiguous elements.
- F. Base courses shall be installed on compacted subgrade. All Gravel Borrow base courses under Site Improvements shall be compacted to 95% dry density and as shown in the Drawings. Do not install base courses on wet, organic, or frozen ground.

3.03 FIELD CONDITIONS

- A. Cold weather procedures shall be followed during construction when ambient temperature falls below 40°F (4°C) or the temperature of masonry units is below 40°F.
 - 1. Wet or frozen stone items shall not be laid.
 - 2. All material and ground with which stone is to come in contact shall be free from frost, ice, snow, and puddles.
 - 3. Implement cold weather construction procedures detailed below:
 - a. An accessible tent or enclosure shall be built to protect mortar/grouted stone from freezing (characterized as 40°F or lower) at a temperature of 50°F minimum to 80°F maximum for a minimum of 48-72 hours after grouting curing period is complete. After the grout curing cycle is complete and is acceptable to the Engineer, the enclosure may be removed.
 - b. When air temperatures fall below 40°F grout mixing water and aggregates shall also be heated to produce grout temperatures between 50°F and 120°F before grouting joints. The placed stone also must be brought up to 50°F minimum before placement of the grout.
- B. Conform to hot weather procedures during the placement and grouting and curing period.
 - 1. Do not mix or grout joints when ambient temperature exceeds 90°F at any time or exceeds 80°F with a wind velocity greater than 10 mph and/or humidity of less than 50% expected during 48 hours after joint curing.
- C. Keep stone below 100°F with shading and/or misting with potable water and maintain grout materials and mixed grout also at temperatures below 100°F during application. Do not mortar joints when ambient temperature is above 90°F or 80°F with a wind velocity greater than 10mph and/or humidity of at or less than 50% expected during 48 hours after joint curing.

3.04 INSPECTIONS

- A. Contractor shall request that the Landscape Architect or Engineer review in the field the layout and proposed elevations of the following items with 48 hours' notice for the following items:
1. Site samples and/or field mock-ups of site improvements
 2. Concrete footings, steel reinforcing, and base course elevations
 3. Location of expansion joints
 4. Layout of all Site Improvements

3.05 SITE IMPROVEMENTS INSTALLATION - GENERAL

- A. All items located on the drawings shall be fabricated and installed by the Contractor as detailed on the Drawings, as per manufacturers' written installation procedures and as reviewed by the Landscape Architect or Engineer.
1. Project Conditions: Installation of items shall follow Manufacturer's guidelines for project conditions during installation and the specifications.
- B. Contractor shall schedule delivery of items and all necessary equipment and hardware so as to arrive at the site in a timely manner to comply with construction schedule and minimize on-site storage time. The Contractor shall be ready to discuss the fabrication of granite with long lead times at the beginning of the Contract so suitable arrangements can be made to meet the date of completion. Items delivered to the site prior to scheduled installation time shall be stored in a secured staging area with all small components retained separately by the Contractor. Protect all items from weather, careless handling, and construction in the vicinity, and from vandals or pilferers.
- C. Mark locations of all items in the field for approval by the Landscape Architect or Engineer before commencing installations.
- D. Contractor shall install all items level and with plumb vertical alignment, or as indicated otherwise on the drawings. Construct finished grades of pavements and subgrades not to exceed minimum longitudinal slopes (0.5%) or maximum longitudinal slopes (4.5% typical, <5%, unless curb ramp <8%) or maximum cross slopes (1.5% typical, 2% maximum) and as shown on the Drawings and verified in the field before construction, to ensure proper drainage and to meet ADA requirements. Inform the Landscape Architect or Engineer if these requirements cannot be met on site before construction.
- E. Any incidence of damage, vandalism, or theft of any item during installation shall be reported immediately to the Landscape Architect or Engineer, remedial action shall be decided, and repairs made to the satisfaction of the Landscape Architect or Engineer. The Contractor is required to secure all items of the Work from access by the Public until Final Acceptance, unless otherwise permitted by Owner.

- F. Installation of all concrete footings and bases, form work, reinforcing, curing, testing and protection shall be as specified in Section 03 30 00 CAST IN PLACE CONCRETE, in this Section, and as shown in the Drawings. Dimensions, grades, and imbedded hardware shall be as indicated on the Drawings and approved shop drawings. Secure and brace all imbedded hardware and objects in concrete in a true and vertical position until cured.

3.06 GRANITE IMPROVEMENTS INSTALLATION - GENERAL

- A. Preparation of granite: clean and dry all stone and surfaces before installing. Use only mild cleaning compounds and brushes that do not scratch, abrade, or otherwise damage the surfaces.
- B. Granite must be protected during transport, delivery, storage, and installation. Any damage or failure such as chipping, scratches, or cracking of any kind in granite before acceptance may be cause for rejection of stone and replacement at Contractor's expense.
- C. Stone Improvements shall be fabricated and installed only by skilled stonemasons and stone fitters.
- D. Set stones to comply with pattern and joint requirements specified in the Drawings and to match as closely as possible items reviewed and approved by Engineer and Landscape Architect in Site Mock-ups. Install all specified anchors, supports, fasteners, and other attachments indicated or necessary to secure stonework in place and according to manufacturer's instructions. Shim and adjust anchors, supports, and accessories to set stones with uniform joints and edges and faces aligned according to specified tolerances and as shown in the Drawings.
- E. Latex Modified Grout (colored) shall be installed where indicated in the Drawings, per ASTM C 476 for "Fine Grout". Follow manufacturer's instructions and required conditions for installing specific joint materials in site walls and for protecting all stone and accessories during installation.
- F. Jointing grout, in approved color, shall be installed in joints not requiring joint sealant. Joints shall be filled not less than 4 days after back up grout is placed and raked. Grout shall be forced into the joints by troweling, and tooled with slight concave joint, flush at top of rubble gravity walls, and shall be blind at gravity wall faces. Excess grout shall be immediately removed from surfaces and stone shall be cleaned.
- G. Grout shall not be used for setting dowels installed in cores of Granite Improvements. Joints between stones shall be installed butt-tight and shall remain un-grouted.
- H. Joint sealants shall be installed at all expansion joints and as shown on the Drawings and as specified herein.
- I. Provide setbacks and expansion joints and stainless steel dowels, as shown on the Drawings. Contractor shall coordinate granite and concrete shop drawings and submit for review to Landscape Architect before construction.

- J. All new stone items shall be shop cut, pre-drilled and pre-assembled to verify dimensions in the Shop before delivery to the site. All dimensions shall be verified by the stone supplier in the field, and shop drawings and samples approved by the Landscape Architect or Engineer before stone fabrication. Coordinate stone fabrication and installation with drain requirements. Supplier shall clearly label and number stone pieces, with accompanying key drawings and locations, for installation in the field.
- K. Construction tolerances for stone items shall be the following:
 - 1. All grades shall meet ADA requirements for maximum slopes and cross slopes. Verify ADA compliance in the field before construction for work to be constructed. Adjust grades in the field as required with review of the Landscape Architect and indicate existing and design grades on shop drawings.
 - 2. All stone items shall be plumb. Maximum variation shall be 1/4" in 10 feet vertical.
 - 3. Variation from horizontal shall not exceed 1/2" in 20 feet, or 3/4" in 40 feet.
 - 4. Set stones to comply with specifications requirements. Install all specified stainless steel type 304 or 316 anchors, supports, fasteners, and other attachments indicated or necessary to secure stonework in place. Shim and adjust anchors, supports, and accessories to set stones with uniform joints and edges and faces aligned according to specified tolerances and shown in the drawings.

3.07 GRANITE SEAT WALL INSTALLATION

- A. Wall footings shall be installed 4' minimum below finished grade and shall be steel reinforced and as shown in the Drawings. Concrete for footing shall be minimum 3,500 psi at 28 days. Refer to Section 03 30 00 – CAST IN PLACE CONCRETE for additional information regarding installation of cast in place concrete.
- B. Walls shall be installed plumb and level to line, grade, and dimensions shown on the Drawings. Verify all dimensions and grades in the field before shop drawing submittals, fabrication, and construction.

3.08 GRANITE MARKER INSTALLATION

- A. Stake locations of granite markers in the field for approval by Landscape Architect prior to installation. Review correct location, rotation, and orientation of each marker in the field prior to installation.
- B. Footing
 - 1. Refer to SECTION 03 30 00 – CAST IN PLACE CONCRETE for requirements for installing cast in place concrete footing.
- C. Gravel borrow surrounding footing and footing shall be installed on compacted subgrade and per requirements of SECTION 31 00 00 – EARTHWORK.

- D. Granite markers shall be installed with stainless steel hardware on concrete foundation as shown on the drawings and in approved shop drawings. Install markers level and plumb.

3.09 GRANITE PAVING INSTALLATION

- A. Gravel borrow base and crushed stone setting beds shall be furnished and placed to 95% dry density and to dimensions after compaction as shown on the Drawings. Review subgrades and finished grades with Engineer and Landscape Architect before final construction, ensuring that ADA slope requirements are met.
- B. Before commencing work, thoroughly clean surfaces to be paved with granite of all dust, dirt, and foreign matter.
- C. Damp dry cement concrete base course shall be coated with neat cement which is scrubbed into base just prior to placement of mud setting bed which shall be placed in the traditional manner.
- D. After placing and leveling bed mix mortar with a straightedge, broadcast dry cement over mortar bed and sprinkle with water.
- E. Granite pavers shall be precut by the supplier. No cutting of granite pavers will be allowed on the job site without permission of the Landscape Architect.
- F. Lay pavers to be mortared in a full mortar bed at the level as shown on the Drawings, in the pattern indicated. Joints shall be width for granite pavers as shown on the Drawings. Curing of mortar bed shall be for at least 3 days prior to grouting vertical paver joints.
- G. Expansion Joints: Apply joint sealant as specified for expansion joints at intersections with vertical surfaces and at penetrations such as columns, box hydrants, light poles, pipe fittings, and anchor bolts. Coordinate locations with locations of expansion joints in concrete base. Install 3/8" wide full depth expansion joints with approved colored joint sealant a minimum of 25' on center as shown on the Drawings. Review layout in the field with the Landscape Architect or Engineer before construction.
- H. Solidly fill standard mortared vertical joints to a full depth with mortar and compact with a small tool to assure full solid joint. Do not smear grout on adjoining surfaces. Carefully wipe spilled mortar from adjoining surfaces as soon as possible without compromising mortar joints.
- I. After initial set of mortar tool joints slightly depressed with a non-staining wood jointer to produce a slightly concave joint free of drying cracks.
 - 1. Cure joints for at least 7 days after installing by covering with curing paper or other non-staining material.
- J. Cleaning mortared granite pavements:
 - 1. After pointing granite, work shall be carefully cleaned, removing all dirt, excess mortar, stains, and other defacement.

2. Following a minimum pavement curing period of 3 weeks, clean granite pavement surfaces of excess mortar, staining, dirt and other unacceptable materials with approved chemicals, equipment, and methods specifically designed for cleaning granite, so as not to change or damage the natural granite finishes. Use materials, equipment, and procedures that follow manufacturer's instructions and environmental requirements. Mild abrasive cleaners that contain no harsh or caustic ingredients may be used, with fiber brooms or brushes and clear water. Wire brushes, steel wool, and acids or other solutions that may cause discoloration are expressly prohibited. Cleaning fluids shall be manually applied. The use of power spray equipment shall not be allowed.
3. Test clean a 4 foot square sample area of pavement for review and approval by the Landscape Architect or Engineer prior to proceeding with the balance of the Work.
4. Protect all adjacent pavements, lawns, and plantings from contact with cleaning fluids or damage by equipment by completely covering with polyethylene film or other methods prior to beginning work.
5. Expansion joints and other joints to receive sealant shall be cleaned of all mortar and left ready for sealing of joints.
6. Contractor shall replace granite paving and other materials damaged by the cleaning operation.
7. Allow no pedestrian traffic on pavement for a minimum of 72 hours and no vehicular traffic for a minimum of 2 weeks.
8. Protect exposed masonry pavements from damage and defacement as a condition of final acceptance.

3.10 INTERPRETIVE SIGN INSTALLATION

A. Footing

2. Refer to SECTION 03 30 00 – CAST IN PLACE CONCRETE for requirements for installing cast in place concrete footing.
3. Gravel borrow surrounding footing and footing shall be installed on compacted subgrade and per requirements of SECTION 31 00 00 – EARTHWORK.

B. Interpretive Sign Frame

1. Sign frame, fabricated and finished in the shop, shall be installed plumb and level, securely set with stainless steel anchors on concrete foundation.
2. Refer to the Drawings for dimensions and layout shown.
3. Interpretive sign panel shall be installed in the shop after fabrication of sign frame and prior to delivery and installation on site.

- C. Interpretive Sign shall be protected from damage during construction and shall be clean as a condition of acceptance. Any damaged finish shall be touched up according to manufacturer's instructions as a condition of acceptance.

3.11 SPLIT RAIL FENCE INSTALLATION

- A. Split rail fence shall be installed at the locations and according to the details as shown on the Plans. Wood fence posts shall be set plumb in augered holes, backfilled, as required, and compacted to the lines and grades shown on the Plans. Backfill shall be gravel borrow and shall be as specified under Item 03 10 00.04. Posts shall not be driven.
- B. The Contractor is cautioned that within the limits of this project, buried utilities, which may be energized, may be present.
- C. The Contractor shall be required to furnish extra length posts at transition areas or where field conditions warrant. These posts shall be of such length that the minimum depth in the ground, as shown on the Plans, is maintained.
- D. Split rail fence shall be installed with a continuous horizontal and vertical line parallel with finish grade to the dimensions indicated on the Plans.
- E. Where preservative-treated members must be cut during erection, apply a field-treatment preservative to comply with AWWA M4. Use inorganic boron (SBX) treatment for members not in contact with the ground and continuously protected from liquid water.

3.12 WOOD GUARDRAIL INSTALLATION

- A. Wood guardrail shall be installed at the locations and according to the details as shown on the Plans. Wood fence posts shall be set plumb in augered holes, backfilled, as required, and compacted to the lines and grades shown on the Plans. Backfill shall be gravel borrow and shall be as specified under Item 03 10 00.04. Posts shall not be driven.
- B. The Contractor is cautioned that within the limits of this project, buried utilities, which may be energized, may be present.
- C. The Contractor shall be required to furnish extra length posts at transition areas or where field conditions warrant. These posts shall be of such length that the minimum depth in the ground, as shown on the Plans, is maintained.
- D. Rails shall be butt joined together and securely bolted with round headed steel carriage bolts to the posts. No washers shall be installed at the bolt heads, but shall be installed at the nuts. The back face of the bolt head shall rest against the front of the post. The nut and washer shall be countersunk in the post so the threaded end of the bolt does not protrude beyond the face of rail. The members shall be sized so that there are at least two bolt threads visible beyond the end of the nut.
- E. Carriage bolts shall be countersunk into smaller predrilled holes. Finish head of carriage bolt shall have less than 1/8 inch of head protruding above the face of rail.

- F. Wood guardrail shall be installed with a continuous horizontal and vertical line parallel with finish grade to the dimensions indicated on the Plans.
- G. Where preservative-treated members must be cut during erection, apply a field-treatment preservative to comply with AWPA M4. Use inorganic boron (SBX) treatment for members not in contact with the ground and continuously protected from liquid water.

3.13 ACCEPTANCE

- A. Site Improvements shall be clean, undamaged, completely and securely installed as shown in the Drawings and in approved field mock ups, adjusted as required in the field with review by Landscape Architect and meeting all ADA requirements as conditions of acceptance.

3.14 GUARANTEE

- A. All site improvements contained within this section shall be guaranteed against defects in installation for three years after final acceptance. The Contractor shall replace, repair, recoat or otherwise make satisfactory to the Owner any unacceptable equipment defects due to improper installation at no additional cost to the Owner.

PART 4 - COMPENSATION

4.01 METHOD OF MEASUREMENT

- A. GRANITE SEAT WALLS will be measured per FOOT complete in place including all excavation, grading, fine grading and compaction, footings, backfill, labor, materials, base materials, freight, equipment, and miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.
- B. GRANITE MARKERS will be measured per EACH complete in place including all labor, materials, base materials, footings, excavation, grading, fine grading, compaction, backfill, freight, equipment, and miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.
- C. GRANITE PAVING will be measured per SQUARE FOOT complete in place including all labor, materials, base materials, excavation, grading, fine grading, compaction, freight, equipment, and miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.
- D. INTERPRETIVE SIGN will be measured per EACH complete in place including all labor, materials, excavation, grading, fine grading, compaction, footings, base materials, freight, equipment, and miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.
- E. TRAILHEAD SIGN will be measured per EACH complete in place including all labor, materials, excavation, grading, fine grading, compaction, footings, base materials, freight, equipment, and miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.

- F. SPLIT RAIL FENCE will be measured per FOOT complete in place including all labor, materials, excavation, grading, fine grading, compaction, footings, base materials, freight, equipment, and miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.
- G. WOOD GUARDRAIL will be measured per FOOT complete in place including all labor, materials, excavation, grading, fine grading, compaction, footings, base materials, freight, equipment, and miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.

4.02 BASIS OF PAYMENT

- A. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment, and miscellaneous items necessary to complete the Work in a satisfactory manner.

4.03 PAYMENT ITEMS

<u>ITEM NO.</u>	<u>ITEM</u>	<u>UNIT</u>
32 30 00.01	Granite Seat Walls	FOOT
32 30 00.02	Granite Marker	EACH
32 30 00.03	Granite Paving	SQUARE FOOT
32 30 00.04	Interpretive Sign	EACH
32 30 00.05	Trailhead Sign	EACH
32 30 00.06	Split Rail Fence	FOOT
32 30 00.07	Wood Guardrail	FOOT

END OF SECTION

SECTION 32 33 00
SITE FURNISHINGS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Include GENERAL CONDITIONS and all parts of Division 01 as part of this Section.
- B. Examine all other Sections of the specifications for requirements which affect Work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under the Contract.

1.02 SUMMARY

- A. The contractor shall provide all labor, materials, and appurtenances necessary for installation of the following as shown on the Drawings and described herein:
 - 1. Trash Receptacle
 - 2. Curved Park Bench
 - 3. Curved Park Bench on Wall
 - 4. Picnic Table With Seats
 - 5. Accessible Picnic Table With Seats
 - 6. Bicycle Rack

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. Examine all other Items of the Specifications for requirements, which affect Work of these Items whether or not such Work is specifically mentioned under these Items. Related Work specified elsewhere:
 - 1. Section 03 30 00 – CAST IN PLACE CONCRETE
 - 2. Section 31 00 00 – EARTHWORK
 - 3. Section 32 30 00 – SITE IMPROVEMENTS
 - 4. Section 32 90 00 – PLANTINGS AND LAWNS
- B. Coordinate Work with that of all other trades affecting or affected by Work of these Items. Cooperate with such trades to assure the steady progress of all Work under the Contract.

1.04 REFERENCES AND STANDARDS

- A. Where references are made in these Specifications to standard specifications, codes, etc., of the U.S. Government, State or local authorities, or professional and industrial societies and associations, the applicable portions thereof shall govern as fully as if they were recited at length herein, and shall include all revisions thereto issued as of the date of the Notice to Contractors pertaining hereto. Comply with the requirements of the following codes and industry standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern. The following reference is used herein and shall mean:
1. MassDOT: "Standard Specifications for Highways and Bridges", Massachusetts Department of Transportation (formerly Massachusetts Highway Dept. and Massachusetts Department of Public Works), Commonwealth of Massachusetts, latest edition and all Supplements.
 2. AASHTO: American Association of State Highway and Transportation Officials, latest edition.
 3. ASTM: American Society for Testing and Materials, latest edition.
 4. ADA: Americans with Disabilities Act, Latest Edition.
 5. AAB: Architectural Access Board, Commonwealth of Massachusetts Regulation Chapter 521 CMR, latest edition.
 6. AWS: American Welding Society
 7. SSPC: Steel Structures Painting Council
- B. Metal Materials and Construction Methods:
1. Workmanship and finish shall be equal to the best practice of modern shops for each item of work. Exposed surfaces shall have smooth finish and sharp, well-defined lines and arises. Sections shall be well formed to shape and size with sharp lines and angles; curved work shall be sprung evenly to dimensioned radii curves. Casting shall have sharp corners and edges, and shall be clean, smooth, and true to pattern. Welding shall be in accordance with the Welding Code of the American Welding Society. All welding, except as otherwise indicated, shall extend the entire length of joints. All welded face joints shall be ground flush and smooth. All welds shall be watertight. Ornamental metalwork shall be cut, drilled, countersunk, and tapped as required for the attachment of other work where shown on the drawings or when instructions for such work are given on the shop drawings. Ornamental metalwork to be built in with concrete or masonry shall be of the form required for anchorage or shall be provided with suitable anchors or expansion shields.
 2. All metal fabrication shall be accomplished using the highest standards of workmanship. Individual steel pieces shall be saw cut and carefully fit together. All connections shall be fully welded and ground flush and smooth. All fabricated

steel items shall be fine sanded throughout to produce a high standard of surfaces and connections shall be without visible grinding marks, surface differentiation or variation.

3. All material that is specified to be galvanized shall be hot-dipped galvanized after fabrication.
4. Galvanized surfaces damaged by welding or other causes shall be wire brushed to remove all loose or cracked zinc coating and re-galvanized with a 95 percent zinc cold galvanizing coating prior to finishing.

1.05 QUALIFICATIONS

- A. The exterior work shall be performed by a firm having a minimum of five (5) years acceptable experience in the installation of materials specified on projects comparable to this project.
- B. Contractor shall submit verification to the Landscape Architect, which states that all proposed manufacturers of site furnishings have produced products of a similar nature and quality to that which is specified, and that each manufacturer is capable of producing the quantity of site furnishings required by the contract within the time allocated in the project schedule.

1.06 SUBMITTALS

- A. Submittals shall be made in groupings where installations are complimentary, i.e. steel, steel decking, steel stairs, stair railings; roof systems/flashings; etc. Failure to comply with this requirement will be cause for rejection of any or all submittals.
- B. Submit documentation of recycled content from manufacturer for products with specified recycled content.
 1. One (1) sample each of each different type of anchor bolts to be used for each site furnishings.
- C. Submit environmental data in accordance with Table 1 of ASTM E 2129 for products provided under work of this Section.
- D. As set forth in the General Conditions, prepare and submit a fully developed submittal schedule; note review times set forth in General Conditions are deemed "average." For large submissions allow longer review times.
- E. Submit documentation of manufacturing locations and origins of materials for products either "manufactured" and/or "manufactured and sourced" within 500 miles of the project site.
- F. The Contractor is encouraged to submit for approval products made from recycled and/or environmentally responsible material. Every effort will be made by the Design Professional Team to approve these materials; the substitution request procedure shall still be enforced.

- G. Shop Drawings and Product Literature: Submit for all proposed items specified in this section.
- H. Samples: Submit actual color and finish sample chips for proposed site furnishings.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Contractor shall arrange delivery of materials in a manner timely to the construction schedule at particular site locations and to avoid exposing materials for excessive lengths of time to adjacent construction operations.
- B. Any surplus materials shall become the property of the Contractor and removed from the site or otherwise legally disposed of.
- C. Deliver site furnishings materials in original sealed containers marked with name of manufacturer and identification of contents. After delivery store materials under waterproof covers on planking clear of ground and protect from handling damage, dirt, staining, water and wind.
- D. Take all necessary precautions to protect all items from moisture, chipping, cracking, or other damage, during the transportation of these materials to the project, unloading and storage on the site. After delivery take all necessary precautions to prevent all items from chipping, cracking, construction dust and debris, or damage of any kind. Damaged units will not be allowed to be installed and should any damaged units be found in constructed work, such units shall be removed immediately and replaced with new units, and the Contractor shall assume all expenses incurred. Stored materials shall be adequately protected against moisture by (1) stacking in such a manner as to allow a complete circulation of air under each stack, and (2) covering each stack, top and sides with a waterproof paper or membrane. Coverings shall remain in place at all times, when not working from the particular stack.

1.08 GUARANTEES AND WARRANTIES

- A. The Contractor shall obtain, in the Owner's name; the standard written manufacturer's guarantee and/or warranties of all materials furnished under this Section where such guarantees are offered in the manufacturer's published product literature. All of these guarantees shall be in addition to, and not in lieu of, other liabilities, which the Contractor may have under law.
- B. In addition to manufacturers' guarantees, the Contractor shall warrant all work of installing the site furnishings, both materials and labor, for a period of one year from date of acceptance by the Owner, exclusive (in addition to) of the manufacturers' warranties. The Contractor shall be held strictly responsible for all parts of the work. If failure in the work develops within one (1) year of the date of final approval and acceptance of the work, the Contractor shall be required to replace all faulty materials at his full expense meeting specification requirements. To this end, the Contractor is advised to purchase materials under a warranty from the manufacturer guaranteeing proper service under the conditions which are established by the Drawings, Specifications, and local conditions.

- C. The Contractor shall furnish labor and materials to fulfill the requirements of this warranty at no additional cost to the Owner. All labor shall include premium time to correct any faulty material or workmanship and all materials required to complete the work.

PART 2 – PRODUCTS

2.01 TRASH RECEPTACLE

A. Manufacturer

- 1. SiteScapes, Inc., 2401 Production Drive, Roca, NE, 888-331-9464, www.sitescapesonline.com or comparable, compatible, performance and color-matched equals approved by the Landscape Architect.

B. Trash Receptacle

- 1. Newcastle NC2-2204-DF, surface/anchor bolt mount

C. Materials

- 1. 3/8" x 1" (10mm x 25mm) vertical solid steel bars; 1/4" x 2" (6mm x 51mm) horizontal solid steel band; 16-gauge steel dome; leveling feet with a 3/8" (10mm) diameter threaded steel shaft.
- 2. Oil impregnated bronze bushings and stainless-steel pivot pins for door movement, patented stainless steel keyed lock assembly, 36 gallon (136 liters) capacity high density plastic liner [weight not to exceed 6 lbs.(2.72kg)].

D. Finishes and Colors

- 1. Surface finish shall be manufacturer's lead-free, polyester powder coat.
- 2. Color of powder coat finish to be manufacturer's standard color "Black".

E. Anchor Bolts

- 1. Anchor Bolts shall be AISI type 316 stainless steel of the type, size and number recommended by the manufacturer.

2.02 CURVED PARK BENCH AND CURVED PARK BENCH ON WALL

A. Manufacturer

- 1. SiteScapes, Inc., 2401 Production Drive, Roca, NE, 888-331-9464, www.sitescapesonline.com or comparable, compatible, performance and color-matched equals approved by the Landscape Architect.

B. Curved Park Bench Model

- 1. City View backed CV1-1041-DF, 6' length, in-ground mount

C. Curved Park Bench On Wall Model

1. City View backless CV1-1121-DF, 6' length, custom radii as shown on Drawings, in-ground mount

D. Materials

1. Scrolled steel slats are formed from 1/4" x 1-1/2" (6mm x 38mm) solid steel bars; steel slats are welded to cross members of 1-5/16" (33mm) tubular steel; 5/8" (16mm) diameter solid steel reinforcement rod; 2-3/8" (60mm) diameter tubular steel legs.

E. Finishes and Colors

1. Surface finish shall be manufacturer's lead-free, polyester powder coat.
2. Color of powder coat to be manufacturer's standard color "Black".

2.03 PICNIC TABLE WITH SEATS AND ACCESSIBLE PICNIC TABLE WITH SEATS

A. Manufacturer

1. SiteScapes, Inc., 2401 Production Drive, Roca, NE, 888-331-9464, www.sitescapesonline.com or comparable, compatible, performance and color-matched equals approved by the Landscape Architect.

B. Picnic Table Model

1. City View CV6-4361-DF, 6' length, in-ground mount

C. Accessible Picnic Table Model

1. City View CV6-5361-ADA-DF, 8' length with ADA compliant leg spacing, in-ground mount

D. Seats

1. City View CV6-4361-DF, 6' length, in-ground mount

E. Materials

1. Scrolled steel slats are formed from 1/4" x 1-1/2" (6mm x 38mm) solid steel bars; steel slats are welded to cross members of 1-7/8" (48mm) diameter tubular steel; 2-3/8" (60mm) diameter tubular steel legs.

F. Finishes and Colors

1. Surface finish shall be manufacturer's lead-free, polyester powder coat.
2. Color of powder coat to be manufacturer's standard color "Black".

2.04 BICYCLE RACK

A. Manufacturer

1. SiteScapes, Inc., 2401 Production Drive, Roca, NE, 888-331-9464, www.sitescapesonline.com or comparable, compatible, performance and color-matched equals approved by the Landscape Architect.

B. Bicycle Rack Model

1. Circle CR2-02-EM-DF

C. Materials

1. 2-3/8" (60.33mm) O.D. tubular steel and 3/8" (10mm) thick steel plate

D. Finishes and colors

1. Surface finish shall be manufacturer's lead-free, polyester powder coat.
2. Color of powder coat to be manufacturer's standard color "Black".

PART 3 – EXECUTION

3.01 EXCAVATION

- A. Contractor shall excavate to the lines and grades shown on the project grading plans. Contractor shall take precautions to minimize over-excavation. Over-excavation shall be filled with compacted infill material, or as directed by the Landscape Architect or Engineer, at the Contractor's expense.
- B. Contractor shall verify location of existing structures and utilities prior to excavation. Contractor shall ensure all surrounding structures are protected from the effects of excavation. Excavation support, if required, is the responsibility of the Contractor.

3.02 GENERAL

- A. All items located on the drawings shall be fabricated and installed by the Contractor as detailed on the Drawings, as per manufacturers' written installation procedures and as reviewed by the Landscape Architect or Engineer, and as documented on approved shop drawings and submittals. All fabrication and installation work shall be accomplished using the highest standards of workmanship and shall include all excavation, concrete for footings, labor, transportation, and incidentals to make the work complete.
- B. Project Conditions: Installation of items shall follow each Manufacturer's guidelines for project conditions during installation. Do not mortar or install concrete work of any kind when the temperature is less than 40 degrees or warmer than 90 degrees Fahrenheit or in the rain or when rain is predicted within 24 hours of scheduled construction of site item.

- C. Contractor shall schedule delivery of items and all necessary equipment and hardware so as to arrive at the site in a timely manner to comply with construction schedule and minimize on-site storage time. Items delivered to the site prior to scheduled installation time shall be stored in a secured staging area with all small components retained separately by the Contractor. Protect all items from weather, careless handling, and construction in the vicinity, and from vandals or pilferers.
- D. Mark locations of all items in the field for approval by the Landscape Architect or Engineer before commencing installations.
- E. Contractor shall install all items level and with plumb vertical alignment, or as indicated otherwise on the drawings.
- F. Any incidence of damage, vandalism, or theft of any item during installation shall be reported immediately to the City of Leominster and the Landscape Architect or Engineer. Remedial action shall be decided, and repairs made to the satisfaction of same.
- G. Installation of all concrete footings and bases, formwork, reinforcing, curing, testing, and protection shall be as specified and as shown in the Drawings. Dimensions, grades, and embedded hardware shall be as indicated on the drawings and approved shop drawings. Secure and brace all embedded hardware and objects in concrete in a true and vertical position until cured.
- H. Contractor shall finish all concrete surfaces which will remain at finished grade by tooling all surfaces smoothly to drain away from installed item, tooling all edges neatly with rolled edges and corners and protecting surfaces from sun, wind, and vandalism until cured. Wrap and protect all embedded anchor bolts.

3.03 TRASH RECEPTACLES

- A. Trash receptacles shall be installed plumb, securely fastened to paving with stainless steel anchor bolts. Bolts shall be trimmed close to nut after installation. Review final locations with the Owner and the Landscape Architect or Engineer in shop drawings submittals before construction.
- B. Provide touch up paint supplied by manufacturer for use by Owner as a condition of acceptance.
- C. Receptacles shall be clean with inserts securely fastened for acceptance.

3.04 CURVED PARK BENCH

- A. Curved park benches shall be installed level and plumb, secured through pavement with in-ground mounts per the Drawings and approved shop drawings. Review final locations with the Owner and the Landscape Architect or Engineer in shop drawings submittals before construction.
- B. Provide touch up paint supplied by manufacturer for use by Owner as a condition of acceptance.

3.05 CURVED PARK BENCH ON WALL

- A. Curved park benches on wall shall be installed level and plumb. Modify in-ground mount posts in the shop as shown on the Drawings and in approved shop drawings prior to delivery and installation. Secure benches in granite seat wall with epoxy. Review final locations with the Owner and the Landscape Architect or Engineer in shop drawings submittals before construction.
- B. Provide touch up paint supplied by manufacturer for use by Owner as a condition of acceptance.

3.06 PICNIC TABLE WITH SEATS AND ACCESSIBLE PICNIC TABLE WITH SEATS

- A. Picnic tables and seats shall be installed level and plumb, secured through pavement with in-ground mounts per the Drawings and approved shop drawings. Review final locations with the Owner and the Landscape Architect or Engineer in shop drawings submittals before construction.
- B. Provide touch up paint supplied by manufacturer for use by Owner as a condition of acceptance.

3.07 BICYCLE RACK

- A. Bicycle racks shall be installed level and plumb, secured through pavement with in-ground mounts per the Drawings and approved shop drawings. Review final locations with the Owner and the Landscape Architect or Engineer in shop drawings submittals before construction.
- B. Provide touch up paint supplied by manufacturer for use by Owner as a condition of acceptance.

3.08 ACCEPTANCE

- A. Site furniture shall be clean and undamaged, securely set and fastened, in locations reviewed by the Landscape Architect or Engineer before construction from approved shop drawings and submittals. Site furniture will be guaranteed for replacement for one year after Final Acceptance.

PART 4 - COMPENSATION

4.01 METHOD OF MEASUREMENT

- A. TRASH RECEPTACLES will be measured per EACH complete in place including storage, labor, all materials, excavation, grading, fine grading, compaction, hardware, attachments, and miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.
- B. CURVED PARK BENCH will be measured per EACH complete in place including storage, labor, all materials, excavation, grading, fine grading, compaction, hardware,

attachments, and miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.

- C. CURVED PARK BENCH ON WALL will be measured per EACH complete in place including all materials, labor, storage, excavation, grading, fine grading, compaction, hardware, attachments, and miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.
- D. PICNIC TABLE WITH SEATS will be measured per EACH complete in place including storage, labor, all materials, excavation, grading, fine grading, compaction, hardware, attachments, and miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.
- E. ACCESSIBLE PICNIC TABLE WITH SEATS will be measured per EACH complete in place including storage, labor, all materials, excavation, grading, fine grading, compaction, hardware, attachments, and miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.
- F. BICYCLE RACK will be measured per EACH complete in place including storage, labor, all materials, excavation, grading, fine grading, compaction, hardware, attachments, footings, base materials, and miscellaneous items necessary to complete the Work as specified and as shown on the Drawings.

4.02 BASIS OF PAYMENT

- A. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.

4.03 PAYMENT ITEMS

<u>ITEM NO.</u>	<u>ITEM</u>	<u>UNIT</u>
32 33 00.01	Trash Receptacle	EACH
32 33 00.02	Curved Park Bench	EACH
32 33 00.03	Curved Park Bench On Wall	EACH
32 33 00.04	Picnic Table With Seats	EACH
32 33 00.05	Accessible Picnic Table With Seats	EACH
32 33 00.06	Bicycle Rack	EACH

END OF SECTION

SECTION 32 90 00
PLANTING AND LAWNS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Include GENERAL CONDITIONS and all parts of Division 01 as part of this Section.
- B. Examine all other Sections of the specifications for requirements which affect Work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under the Contract.

1.02 SUMMARY

- A. The Work of this Section includes but is not limited to:
 - 1. Fine grading of all planted and seeded areas,
 - 2. Installing trees, shrubs, perennials, and groundcovers as shown on contract drawings,
 - 3. Providing specified planting soil in landscape areas in quantities sufficient to meet the requirements of the drawings, using imported soil materials and all testing,
 - 4. Drainage test pits for all tree plantings,
 - 5. Fertilizing and pruning trees and shrubs,
 - 6. Guying trees,
 - 7. Mulching planting beds and tree saucers,
 - 8. Maintaining all plantings through 1-year guarantee period,
 - 9. Fine grading and installing tested and approved topsoil and/or loam as planting soil in seeded and planted areas to required depths,
 - 10. Seeded lawn, including seeding of all disturbed areas at Landscape Architects direction,
 - 11. Sodded lawns at no additional cost to the Owner, if seeding is out of season and Contractor and Owner agree to install Sod instead,
 - 12. Maintenance, reseeding, guarantee, and protection of seeded and/or sodded lawns,

13. Locating and pre-tagging plant materials specified at nurseries at least two months before construction. Contractor shall also provide full compensation (including time and expenses) for Landscape Architect to tag trees at nurseries outside of Massachusetts and for any tagging visits to Massachusetts's nurseries where plant material provided for selection does not meet specifications as determined by the Landscape Architect.

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. The following item is not included in this Section and will be performed under the designated Sections:
 1. Section 03 30 00 – CAST IN PLACE CONCRETE
 2. Section 01 53 69 – TREE PROTECTION
 3. Section 31 00 00 – EARTHWORK
 4. Section 32 10 00 – BASES, BALASTS, AND PAVING
 5. Section 32 30 00 – SITE IMPROVEMENTS

1.04 REFERENCES AND STANDARDS

- A. The following references are used herein and shall mean:
 1. AAN: American Association of Nurserymen "American Standard for Nursery Stock," ANSI Z60.1, latest edition.
 2. AJCHN: American Joint Committee on Horticultural Nomenclature. "Standardized Plant Names," latest edition.
 3. AOAC: Association of Official Agricultural Chemists.
 4. TCIA: Tree Care Industry Association, Pruning Standards: "Standards for Pruning Shade Trees," and "Standards for Pesticide Application Operations" latest editions, NAA, P.O. Box 1094, Meeting Place Mall, Route 101, Amherst, NH 03031.
 5. USDA: United States Department of Agriculture, Agricultural Research Service, "USDA Plant Hardiness Zone Map," Miscellaneous Publication No. 1475, latest edition.
 6. MassDOT: "Standard Specifications for Highways and Bridges", Massachusetts Department of Transportation (formerly Massachusetts Highway Dept. and Massachusetts Department of Public Works), Commonwealth of Massachusetts, latest edition and all Supplements.
 7. ASTM International: American Society of Testing Materials International.

8. AASHTO: American Association of State Highway and Transportation Officials.
9. ANSI/NFPA: American National Standards Institute, National Fire Protection Act.
10. UMTC: University of Massachusetts Transportation Center, "Manufactured Loam using Compost Material - Phase 1: Feasibility", October 1966 or latest update.
11. MassDEP: Department of Environmental Protection, Commonwealth of Massachusetts.
12. USEPA: United States Environmental Protection Agency

1.05 QUALITY ASSURANCE

- A. Contractor shall have at least five (5) years of experience in Landscape Work similar in materials, design, and extent to that indicated for this project and with a record of successful landscape establishment. Installer shall maintain an experienced supervisor on the project site during all times that landscape construction is in progress. Provide written qualification data for firms and persons to be responsible for Work, to demonstrate their capabilities and experience. Include lists of completed projects, with project names, addresses, phone numbers, and names and address of designers and clients.
- B. Contractor shall conduct pre-landscape construction conference at Project site as directed by the Landscape Architect, to review landscape construction procedures, site conditions, and submittal requirements required in the Work of this Section, especially the requirements for Planting Soil, before any products are submitted for review and approval, or landscape construction commences.
- C. To the extent possible, provide each plant material species or variety from single source.
- D. If required, only herbicides, pre-emergents, fertilizers, fungicides, and pesticides reviewed and approved by the Landscape Architect and permitted for use shall be used and applied by appropriately licensed personnel according to manufacturer's recommendations.
- E. Select compatible products where options are provided, provide each material from a single source and only with review and approval of Landscape Architect.

1.06 SUBMITTALS

- A. Do not order or deliver materials until required samples, certifications, manufacturers' literature and test results have been reviewed by the Landscape Architect. Delivered materials shall closely match the samples, as judged by the Landscape Architect. If any deviations from specified materials are proposed, submit written request explaining differences and reasons for request. Submit three (3) copies of each document required, or as directed by the Landscape Architect.
- B. Soil Additives and amendments: Product or testing certificates signed by manufacturers certifying that their products comply with specified requirements:

1. Manufacturers' certified analysis for all products specified.
 2. Analysis for other amendments, such as organic compost, by the University of Massachusetts Agricultural Extension Service or other approved testing laboratory, made according to methods established by the AOAC, where applicable, and as required in this Specification.
 3. Sieve and salt analysis of sand proposed as a planting soil amendment or component.
- C. Chemicals and Pesticides: Manufacturers' literature.
- D. Biodegradable Hay blanket: Manufacturer's literature and product data sheet.
- E. Plant Materials: Labels and nursery certificates substantiating that plants, trees and shrubs materials comply with specified requirements set by AAN and others and were grown within USDA hardiness zones specified.
- F. Tagging and planting schedule: Proposed dates for tagging plants at nurseries, and for planting each type of planting, with consideration for fall-hazard species, work coordination, etc.
- G. Seed Mix: Manufacturer's Certificate of Compliance with the specifications for each type of seed required. These certificates shall include the guaranteed percentage of purity, weed content and germination of the seed, and the net weight and date of shipment and pounds per acre sowing rate. No seed may be sown until the Contractor has submitted the certificates.
- H. Sod seed mix, if used: Sod producer's statement of composition, percentages of purity and germination of each variety and production location.
- I. Soil tests: Reports indicating and interpreting test results for complete planting soil and soil components. Final planting soil for testing may be composed of tested, stockpiled topsoil for reuse, approved organic compost and/or sand amendments, and/or off-site loam borrow mixed in order to meet Specifications for planting soil. Submit reports at least one (1) month before any delivery of materials. All tests shall be performed by the University of Massachusetts Cooperative Extension Service in accordance with current standards of Association of Official Agricultural Chemists or other testing laboratory as approved by the Landscape Architect. Contractor shall deliver test samples to laboratory, and have test results sent directly to the Landscape Architect. All costs shall be paid by Contractor. Testing reports shall include the following for the stockpiled topsoil and finished planting soil that may or may not be amended in order to meet the specifications:
1. Mechanical gradation (sieve analysis) and USDA soil classification
 2. Percent organic matter, determined by loss on ignition of samples oven-dried to constant weight at 230 degrees F, plus or minus nine (9) degrees
 3. Chemical analysis for elements specified herein.

4. Chemical analysis for soluble salts
 5. Chemical analysis for carbon: nitrogen ratio
 6. Chemical analysis for acidity (pH)
 7. Recommendations for soil additives to correct soils deficiencies as necessary to accomplish particular planting operations of Project
 8. Chemical analysis for toxic elements in planting soil as specified herein.
 9. Testing for heavy metals as required by the USEPA
 10. Refer to Article 2.01 Planting Soil and Article 2.02 Planting Soil Testing Program, for additional requirements.
- J. Organic Material: organic matter from biosolids will not be allowed.
- K. Samples:
1. Planting Soil, complete with any necessary amendments and additives: Following initial testing and certification by the Contractor of planting soil proposed for use to meet specifications, provide two (2) ten-pound representative samples of planting soil for testing. Provide a two-pound sample for the Landscape Architect's inspection, to be retained by the Landscape Architect for comparison with delivered soil. The Landscape Architect may examine each planting soil delivery to the site, and may request further testing be performed at the Contractor's expense. No planting soil shall be delivered until the review of samples and test results by the Landscape Architect, but such review shall not constitute final acceptance. The Landscape Architect reserves the right to reject on or after delivery any material that does not meet specifications or match approved samples. Use of unapproved planting soil will result in rejection by the Landscape Architect and removal by the Contractor at no additional cost to the City of Leominster.
 2. Fertilizer: one (1) sample packet of planting fertilizer; one-pound sample of slow-release pelletized fertilizer; certificate showing composition and analysis; purchasing receipt showing the total quantity purchased for the Project.
 3. Organic Material: Two-pound sample and source for review.
 4. Bark Mulch: Two-pound sample and source for review.
 5. Fertilizer: Submit certificates of analysis for lawn fertilizer.
 6. Chemicals (lawn and tree herbicides, fungicides, and pesticides): Manufacturer's literature and analysis.
 7. Maintenance: Provide watering and fertilizing schedule to the City of Leominster for approval.

8. Maintenance Instructions: Submit recommended procedures for routine year - round maintenance of plantings. Instructions shall be submitted as a condition of Substantial Completion of the Project.

1.07 EXAMINATION OF EXISTING CONDITIONS

- A. Inspect all areas to be planted before starting Work and report any defect, such as incorrect grading, incorrect subgrade elevations, or drainage problems, etc., to the Landscape Architect and Engineer prior to beginning Work. Commencement of Work shall indicate acceptance of filled subgrade areas to be planted, and Contractor shall assume responsibility for Work. Inspect areas to be fine graded and seeded before starting work.
- B. The Contractor shall be solely responsible for judging the full extent of Work requirements involved, including but not limited to the potential need for storing and maintaining plants temporarily and re-handling plants prior to final installation.
- C. Determine location of above-grade and underground utilities and perform Work in a manner which will avoid damage. Review the locations of utilities with the Landscape Architect before proceeding. Contact all relevant utility companies, public or private, prior to beginning work; contact DIG SAFE 1-888-344-7233 (serves five N. E. states). Report any conflicts to the Landscape Architect and the City of Leominster in writing before excavating. Hand-excavate as required. Maintain grade stakes until removal is approved by the Landscape Architect.
- D. Coordinate installation of planting materials to assure installation during normal planting seasons for each type of plant material required and as specified in planting schedule. Species designated as "Fall Hazard" by Nursery shall be planted in the Spring, indeterminate of other site and project schedules.
- E. Coordinate planting Work with other Work of this contract being performed on site, or work being performed by others.
- F. Coordinate maintenance of landscape areas installed at different times. Protect completed Work as sequence of planting proceeds.

PART 2 - PRODUCTS

2.01 PLANTING SOIL

- A. Planting Soil Source
 1. Contractor shall be responsible for providing, screening, and mixing planting soil and loam amendments to create suitable planting soil that meets specifications in quantities and locations shown in the Drawings. Loam borrow will be required to meet the quantities as shown in the details and plans. Contractor shall provide additional and alternative sources of planting soil components and amendments as required and requested by the Landscape Architect, based on soil tests performed on an on-going basis throughout the construction period in order to

meet specifications. Final planting soil approved for use shall be screened with a 1-inch screen prior to spreading.

2. Planting soil mix, delivered, and/or installed shall be consistent throughout the project, and shall be obtained from approved sources, matching approved samples and mixture proportions reviewed before construction. If source or component changes at any time during construction, Contractor shall obtain new mechanical sieve, heavy metals, chemical, and nutrient tests of new source samples, remix components and resubmit test results of new planting soil mixture to the Landscape Architect for review and approval.

B. Planting Soil

1. Planting soil shall be a natural, amended natural, or manufactured soil, produced by a commercial processing facility specializing in production of loam, sands, gravels, and stone. Planting soil may have its topsoil component stripped from sites scheduled for construction, but not from USDA-classified prime farmland. Stripped topsoil shall be free from subsoil. Natural topsoil shall be from well-drained sites where topsoil occurs at least 6" deep. Topsoil or organic matter obtained from bogs or marshes shall not be used.
2. Organic additives for Planting Soil shall be derived from natural organic sources such as mature leaf compost or sphagnum peat moss if acceptable to the Engineer, and not from composted biosolids or waste.
3. Planting soil shall be a "sandy loam" as determined by mechanical analysis (ASTM D-422) and based on the USDA Classification system, conforming to the following grain size distribution:

U.S. Sieve No.	Percent Passing By Weight	
	Maximum	Minimum
4	100	97
1	95	90
40	85	60
100	60	38
200	35	22
0.002 mm	5	0

4. Maximum grain size of any soil material shall be 1/2" in the largest dimension and shall be screened to meet that criteria. Test shall be by combined hydrometer and wet sieving in compliance with ASTM D422 after destruction of organic matter by ignition.
5. Planting soil as amended and proposed for use shall contain between 5% and 8% organic matter by weight as determined by the loss on ignition of samples that have been oven-dried to a constant weight at a temperature of 105 degrees C.
6. The acidity range of planting soil shall be 5.5 to 6.5 pH .

7. Planting soil shall be screened and free of plants and roots, clay lumps, stones or debris one half (1/2) inch or larger in any dimension.
8. Soluble salt content shall be less than 75 PPM, if a naturally stripped topsoil. Salt content will lower the longer the soil is spread on site, with rain and aging of the organic component. If salt content of the planting soil is too high, as determined by the Landscape Architect, the salt content must be within approved ranges by the time the soil is spread on site and plants installed, or planting will be delayed or soil rejected and will require replacement with an approved planting soil.
9. Carbon: nitrogen ratio shall be between ten (10) and fourteen (14) to one (1) if applicable.
10. Nutrient content of prepared planting soil and levels of toxic elements and compounds in complete planting soil shall be within the following ranges, measured in PPM:

Substance	Acceptable Levels PPM (=mg/kg)	Unacceptable Levels PPM (=mg/kg)
Aluminum		75+
Ammonium	6 - 24	>24
Arsenic	<1	10+
Boron	.1-.5	.5+
Cadmium	<0.2	5.0+
Calcium	1000 - 1500	>1500
Chromium		250+
Cobalt		50+
Copper	0.3-.6	>.6
Iron	2.7 – 9.4	>10
Lead	0-10	>22
Magnesium	50 - 120	>120
Manganese	1.1 – 6.3	>7
Mercury		2+
Molybdenum	0 - 15	40+
Nickel		100+
Nitrate	30 - 235	235+
Phosphorus	4 - 14	18+
Potassium	100 - 160	200+
Selenium		36+
Zinc	1.0 – 7.6	15+
PCBs	0	1+

2.02 PLANTING SOIL TESTING PROGRAM

- A. Contractor shall be responsible for mixing and obtaining planting soil samples and submitting samples for testing to ensure that proposed and installed planting soil materials conform to the specifications as stated herein and as required in Article 1.05. All costs for testing will be paid for by the Contractor. Submit prototype planting soil mixes to Laboratory at least 60 days before intended use on site, to allow for reformulation and retesting if test results are rejected.

- B. All planting soil and planting soil products brought to or bulk mixed on site, even if previously approved by test results, shall be submitted for testing conformance and as required in the on-site planting soil sampling program. Tests shall be combined hydrometer and wet sieving in compliance with ASTM C422 after destruction of organic matter by ignition and according to additional requirements of this Section. Samples for tests shall be taken from stockpiles and source within one (1) day of delivery to the site in the presence of the Landscape Architect.
- C. Prior to delivery or spreading, Contractor shall submit a minimum of two (2) approved sample test results of planting soil from each proposed location or source.
- D. Contractor shall deliver samples to Landscape Architect and testing laboratory, shall have testing report sent directly to the Landscape Architect, and shall pay all costs. Contractor shall furnish additional amendments of fertilizer, lime and organic matter at his/her own expense that may be required by test results and required by specifications.
- E. Sieve, heavy metals, and chemical analysis shall be performed by the University of Massachusetts Agricultural Station in Amherst, MA or approved testing laboratory, in accordance with the current standards of the Association of Official Agricultural Chemists and as required to meet requirements for chemical compositions as specified. Incomplete testing or test results will result in rejection and require re-testing by the Contractor at his/her expense.
- F. Soil samples of mixed and fully amended planting soil shall be tested for Nitrate, Nitrogen, Ammonium Nitrogen, Phosphorus, Potassium, Calcium Aluminum, Soluble Salts and show the acidity of the soil and other values for compounds as indicated in Article 2.01 paragraph B. All sands and organic matter proposed for use as soil amendments shall also be tested for the requirements specified for those items and submitted for review and approval.
- G. Based on the initial and delivered planting soil test results, the planting soil shall be identified as acceptable, acceptable with certain fertilizer, limestone, and other amendments, or unacceptable and requiring resubmission and retesting. If sand, gypsum, or other major planting soil components are required to be added to meet specifications, additional samples with new formulations shall be required to be submitted for testing, review, and approval. If the planting soil is found unacceptable, the Contractor shall be responsible for identifying another source of planting soil and soil ingredients, and/or remix and re-blend as many planting soil component mixtures required to produce a planting soil approved by the Landscape Architect that meets specifications. Contractor shall incur all expenses associated with testing and mixing additional samples required for approval.
- H. All planting soil and sand-based planting medium installed shall match the samples approved by the Landscape Architect. The Landscape Architect may require Contractor to furnish additional testing of planting soil or planting medium delivered to the site if it does not appear to be consistent with previously tested samples.

2.03 SOIL ADDITIVES FOR PLANTING SOIL

- A. Aluminum sulphate for adjustment of planting soil pH shall be commercial sulfur, unadulterated, delivered in containers with the name of the manufacturer, material analysis and net weight appearing on each container.
- B. Ground limestone for adjustment of planting soil pH shall be agricultural grade ground dolomite limestone containing at least 85% calcium carbonate equivalent, with 50% passing the 100 mesh and 95% passing the 20 mesh sieve.
- C. Organic Compost:
 1. Organic compost shall be natural or manufactured mature, composted organic material such as mature leaf compost, etc. (not biosolids). Organic material shall be as specified by UMTC 'Article 5.4 - Standard Compost Specifications for Massachusetts'. Only compost meeting Class A (USEPA) or Type I (MassDEP) compost products shall be acceptable.
 2. Organic compost shall be produced by a MassDEP-approved composting vendor of material originating from mature leaf compost, other aged composted vegetable materials such as brewer's waste, composted with wood products, safe for plants, humans and soil organisms (Class A or Type I). Raw (uncomposted or unprocessed) or incompletely composted organic matter shall be rejected. Biosolid composted matter or waste shall not be acceptable for use as organic compost additive for Planting Soil.
 3. Organic compost shall contain no uncomposted bulking agents, such as uncomposted wood chips, and shall be free from hard lumps and free water when handled (at least 60% dry solids). It may be shredded or granular in form. No plastic shall be present. It shall be free from excessive amounts of zinc or unpleasant odor. 100% of material shall pass a 1/2" sieve..
 4. Each and every source of organic material proposed for use as a soil amendment or component of planting soil must be tested on the criteria specified in this Article and results submitted for review and approval by the Landscape Architect before construction. Each delivery of organic material must match samples tested by Contractor and approved by the Landscape Architect or delivered material will be rejected. Each delivery of compost shall require testing and approval, per specifications, to ensure compliance with previously approved test submittals. Contractor shall provide sufficient quantities of composted organic material to meet requirements of the planting soil specified and detailed in the Drawings after mixing, spreading, and compaction, and may obtain this material from various sources, if material and test results have been reviewed and approved by the Landscape Architect.
 5. Other requirements and test results for specific characteristics of the organic matter and results issued for the following criteria shall be:
 - a. According to the methods of testing of AOAC, latest edition, the acidity range shall be approximately 5.5 pH minimum to 8.0 pH maximum.

- b. The organic matter shall not be less than 40% as determined by loss on ignition for compost. The density shall be 1150 kilos/cubic meter (850 lbs/cy).
- c. The water absorbing ability shall be 200% minimum by weight on an oven dry basis for organic compost other than peat moss.
- d. The Carbon/nitrogen ratio shall be between 10:1 to maximum 25:1 without the addition of nitrogen.
- e. The degree of maturity should be Grades V, 'very stable compost' as measured in a colorimetric-based maturity test. The stability shall be, on the O2 evolution test, < 7 mg C02 - C/g BVS day or deWar self-heating test < 15 degrees C above room temperature.
- f. There should be no unpleasant or detectable odor of ammonia or hydrogen sulfide, which would indicate immature compost. Color of compost shall be dark brown.
- g. Total salinity should be less than 4.0 mmhos/cm (Ds/m) or less than 2560 PPM salt (NaCl)
- h. The material shall contain some nitrogen, phosphorus, copper, boron, manganese, and molybdenum in horticulturally and agriculturally appropriate proportions to prevent ion antagonisms.
- i. Concentrations of arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, and selenium must be below EPA (EPA CFR Part 503 Regulations, Table 3, p. 93392, Vol. 58 No.32, 1993) and Commonwealth standards for application to soils with human activity. No pesticide residues or chlorinated hydrocarbons of any kind should be present.
- j. Maturity and age of composted organic material intended for use on this project shall be verified in writing by supplier as part of test results.

D. Sand for use as PLANTING SOIL additive or component:

- 1. Sand for use as ingredient or amendment in planting soil shall be medium sand with angular (not round) sand particles (beach sand not acceptable). Sand that meets MassDOT Standard Specifications M4.101.0: Sand Borrow Type a, may be used if material is not self-compacting or overly gravelly, according to the Landscape Architect.
- 2. Sand sources and requirements of sand as a planting soil component or amendment may require adjustment at the request of the Landscape Architect, depending on the characteristics and proportions of the other planting soil components (stripped topsoil, borrow, organic component) used to mix the approved planting soil. The intent of the installed planting soil is to provide a consistent, stable, well draining, aerated, nutrient rich, and friable planting soil that will support mature trees and lawns in an irrigated environment.

2.04 SEED MIXES

- A. Contractor shall furnish the Landscape Architect with the dealer's certificate of the mixture composition for review and approval before seeding operations begin. Seed mixture shall be fresh, clean, new crop seed of the previous year's crop, mixed off site by the seed dealer. Weed seed content shall not exceed 1% by weight. The seed shall be furnished and delivered in the proportion specified below in new, clean, sealed and properly labeled containers. All seed shall comply with State and Federal seed laws; seed that has become wet, moldy or otherwise damaged will be rejected.
- B. SEEDED LAWN MIX: Sow at six (6) lbs minimum per 1,000 square feet of the following seed varieties thoroughly mixed:

<i>Botanical Name</i> Common Name	Proportion By Weight Minimum	Germination Minimum	Purity Minimum
<i>Lolium perenne</i> Perennial Ryegrass (2) Named Varieties: 'Shining Star' 'Performance'	(25%) 12.5% 12.5%	90% 90% 90%	90% 90% 90%
<i>Poa pratensis</i> Kentucky Bluegrass (2) Named Varieties: 'Blue Bonnet' 'Ares'	(25%) 12.5% 12.5%	85% 85% 85%	90% 90% 90%
<i>Festuca arundinacea</i> Tall Fescue (1) Named Variety: 'Rebel'	20%	95%	90%
<i>Festuca rubra ssp. commutata</i> Chewings Fescue (1) Named Variety: 'Survivor'	15%	95%	90%
<i>Festuca rubra ssp. arenaria</i> Creeping Red Fescue (1) Named Variety: 'Razor'	15%	95%	90%

2.05 HYDROMULCH

- A. Hydromulch used in hydroseed mixture for lawn, to cover specific seeded areas, shall be fiber processed from whole wood chips manufactured specifically for standard hydraulic mulching equipment. Fiber shall not be produced from recycled material such as sawdust, paper, or cardboard.

- B. Moisture content of hydromulch shall not exceed 10%, plus or minus 3% as defined by the pulp and paper industry standards. Fiber shall have a water holding capacity of not less than 900 grams water per 100 grams fiber.
- C. The hydromulch shall be of such character that the fiber will be dispersed into a uniform slurry when mixed with water. It shall be nontoxic to plant life or animal life.
- D. The hydromulch shall contain a non-petroleum based organic tackifier and a green dye to allow for easy visual metering during application but shall be noninjurious to plant growth.

2.06 CHEMICALS AND INSECTICIDES

- A. Provide chemicals and insecticides only as needed for fungus or pest control for plants and as approved by the MassDEP for the intended uses and application rates and applied only when and where permitted by the Landscape Architect and the City of Leominster.

2.07 WATER

- A. Contractor shall provide all labor and materials required to furnish water to plantings and seeded or sodded lawns, until Final Acceptance at his/her expense. Contractor shall supply temporary soaker hoses, hose connections, and any other appurtenances necessary to connect and draw from existing water lines or water trucks. Contractor shall not cause damage to any vegetation during the watering operation. Water shall be potable, free of salt and other impurities injurious to vegetation.

2.08 PLANT MATERIALS

- A. Provide quality, size, genus, species, and variety of trees indicated, complying with applicable requirements of AJCHN and AAN. No substitutions will be permitted without prior written approval by the Landscape Architect. All plants shall be nursery grown, not collected from natural vegetated areas.
- B. The Landscape Architect, accompanied by the Contractor, will tag plants at their place of growth, after pre-tagging by Contractor. At least one (1) month prior to the expected planting date, request in writing that the Landscape Architect schedule tagging trip(s). The Landscape Architect representative's time and expenses spent to locate plant material shall be paid for by Contractor only if the Landscape Architect is sent to a site where satisfactory plant materials are not located and to nurseries not located in Massachusetts. No plant material tagged by the Landscape Architect shall be delivered to the site of Work without these tags.
- C. The Landscape Architect's selection shall not impair the right of inspection and rejection upon delivery at the site or during the progress of the Work. Contractor shall pay cost of replacement of materials rejected by the Landscape Architect at the site.
- D. Each tree shall be labeled with securely attached, waterproof tag bearing legible designation of botanical and common name according to AJCHN.

- E. Only plant stock obtained from and grown between latitudes 40-49 degrees north and USDA hardiness Zones 1 through 5, will be accepted.
- F. Plants shall be in accordance with AAN as a minimum requirement for acceptance. Plants shall be typical of their species or variety, have a normal habit of growth, and meet the size and form requirements indicated by the Landscape Architect. The trunk of each tree shall be a single trunk growing from a single intact crown of roots. Trees indicated as "multi-stemmed" in the Plant List shall have three (3) stems, typical.
- G. Measure trees according to AAN with branches and trunks or canes in their normal position. Take caliper measurements six (6) inches above ground for trees up to 4-inch caliper size, and 12 inches above ground for larger sizes.
- H. The height of trees (measured from the crown of the roots to the tip of the top branch) shall be no less than the minimum size directed by the Landscape Architect or as required by AAN based upon caliper size designated. Lateral branching of deciduous trees is to begin at no less than seven (7) feet height.
- I. Trees of a larger size may be used if acceptable to the Landscape Architect with a proportionate increase in size of roots or balls. Do not cut root balls to size of smaller plants to fit limited planting area. Do not prune to obtain required sizes.
- J. Trunks shall be free from sunscald, frost cracks, or wounds resulting from abrasions, fire, or other causes. No tree shall have evidence of ever having had basal suckers. The plants must be in a moist vigorous condition, free from dead wood, bruises or other root, bark or branch injuries.
- K. Trees shall not be pruned in preparation for transplanting. No wounds from previous pruning shall be present having a diameter exceeding two (2) inches; such wounds shall show vigorous scar tissue on all edges.
- L. All plant parts shall be moist and show active cambium when cut. Plants shall be sound, healthy, and vigorous, well-branched and densely foliated when in leaf. They shall be certified by the grower as free of disease, insect pests, eggs or larvae.
- M. Balled and burlapped plants shall be moved with root systems as solid units with balls of earth firmly wrapped with untreated natural eight-ounce burlap, firmly held in place by a stout cord or wire. Plants prepared with plastic or other non-biodegradable wrappings will not be accepted except when directed by the Landscape Architect to be container grown. All plastic products must be removed before planting is accepted. Diameter and depth of the balls of earth on balled and burlapped plants must be sufficient to encompass the fibrous root feeding system necessary for healthy development of plant, according to AAN standards. Top of root ball shall be actual finish grade of tree as grown in nursery; excess soil shall be removed from top of ball prior to delivery. No plant will be accepted when ball of earth surrounding its roots has been cracked or broken prior to or during process of planting or after burlap, staves, ropes, container, or platform required in connection with its transplanting have been removed.
- N. Trees delivered by truck and plants requiring storage on site shall be properly wrapped and covered during delivery to prevent drying of branches, leaves, or buds. Plant root

balls shall be firmly bound, unbroken, and reasonably moist to indicate watering prior to delivery and during storage, and tree trunks shall be free from fresh scars and damage in handling.

- O. Tree species designated as “Fall Hazard”, such as Birch and Maples, shall not be substituted with species that are appropriate for fall planting, but shall be planted in the spring, regardless of other project schedules.

2.09 FERTILIZERS

- A. FERTILIZER FOR TREES installed by the Contractor shall be provided through the use of slow release fertilizer packets, which are designed and certified by the manufacturer to provide controlled release of nutrients over a minimum three-year period. Packets shall remain sealed at delivery to site and until installation. Each packet shall consist of four (4) ounces of water-soluble fertilizer with a minimum guaranteed analysis of available elements by weight as follows:

<u>Nitrogen</u>	<u>Phosphorus</u>	<u>Potash</u>
16%	16%	16%

- B. FERTILIZER FOR SEEDED AREAS shall be a commercial product complying with the State and United States fertilizer laws. Deliver to the site in the original unopened containers that shall bear the manufacturer's certificate of compliance covering analysis. At least 50% by weight of the nitrogen content shall be derived from organic materials. Fertilizer shall contain not less than the percentages of weight of ingredients as follows or as recommended by the soil analysis:

<u>Nitrogen</u>	<u>Phosphorus</u>	<u>Potash</u>
10%	6%	4%

2.10 BARK MULCH BEDS

- A. Bark mulch shall be shredded organic pine bark aged at least six (6) months and not longer than two (2) years. The mulch shall be dark brown in color, free of chunks and pieces of wood thicker than one-quarter inch. Mulch shall be free of stringy material over four (4) inches in length, and free of chunks over three (3) inches in width. It shall not contain, in the judgment of the Landscape Architect, an excess of fine particles, overly composted or soggy compost material. Bark mulch shall not have an unpleasant odor nor have any evidence of fungus growth. **Hemlock bark shall not be used or brought to the site.**

2.11 CHEMICALS AND INSECTICIDES

- A. Provide chemicals and insecticides as needed for fungus or pest control for plants. All chemicals and insecticides shall be approved by the MassDEP for the intended uses and application rates and be acceptable to the Landscape Architect and the City of Leominster.

2.12 TREE WRAP

- A. Tree wrap may be used to protect tree trunks from damage during digging at the nursery, transport to the site or during planting operations, but the use of tree wrap of any type shall not be allowed on tree trunks and branches after trees are planted.

2.13 GUYING AND ANCHORING MATERIALS

- A. Use brown or black, heavy duty woven poly corded guying tape manufactured specifically for tree guying, such as 'Arbortape', in samples as approved by the Landscape Architect, to tie trees to stakes, using expanding knots as indicated in manufacturer's instructions. Do not use cable encased in hose. Use tapered hardwood stakes driven at an angle below grade as deadmen to anchor guys below grade as shown in the Drawings.

2.14 TREE PAINT/TREE WOUND DRESSING

- A. Tree paint or tree wound dressing of any type shall not be used on tree wounds. Allow wound to heal and weather naturally, after trace cutting ragged or loose damaged bark back to live cambium.

PART 3 – EXECUTION

3.01 SITE PREPARATION PRIOR TO COMMENCING PLANTING AND INSTALLATION OF LAWNS

- A. Refer to Section 31 00 00 – EARTHWORK for rough grading which shall be performed before planting commences.
- B. Before starting work, locate existing underground utilities in areas of Work; call DIG SAFE and other sources of information as necessary. Should uncharted, or incorrectly charted piping or other utilities be encountered during excavation, notify the Landscape architect. Cooperate with the Engineer and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of the utility companies and the City of Leominster. Do not interrupt existing utilities serving facilities occupied or used by others, during occupied hours, except when permitted in writing by the City of Leominster and then only after acceptable temporary utility services have been provided. Provide minimum of 48-hour notice to the City of Leominster, and obtain written notice to proceed before interrupting any utility.
- C. Protect all existing structures, existing subgrades to remain, utilities, pavements, lawns, planting and other site improvements from damage due to grading Work.
- D. Submit to Landscape Architect any requests for adjustments in grades and alignments found necessary to avoid interference with special conditions encountered.
- E. Render the site erosion-free as necessary. Submit proposed methods for erosion control if necessary. Approval by the Engineer or Landscape Architect of any method to accomplish this does not relieve the Contractor of full responsibility for controlling erosion and/or sedimentation throughout the construction process.

- F. Stockpile usable excavated materials in locations permitted by and/or where directed by the Landscape Architect or the City of Leominster. Place, grade and shape stockpiles for proper drainage. Locate and retain soil materials away from edge of excavations. Dispose of waste materials legally.
- G. Backfill excavations as promptly as Work permits, but not until completion of inspection, testing, approval and recording locations of underdrainage and irrigation.
- H. Uniformly grade subgrade to pitch a minimum of 1-2% including adjacent transition areas, providing minimum gradients for temporary drainage to catch basins and swales, streets, curbs, and away from plantings and structures.
- I. Protect subgrade areas scheduled for planting from traffic and erosion. Keep free of trash and debris. Repair and re-establish grades in settled, eroded and rutted areas to specified tolerances. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape and compact to required density prior to further construction.
- J. The top four (4) inches of subgrade of all areas to be planted and seeded shall be raked of all rubbish, sticks, roots, existing vegetative material and roots, and debris and stones larger than 1/2-inch and shall be removed off site. Subgrade surfaces shall be harrowed, raked or otherwise loosened to a depth of 4-inches. Subgrade shall be inspected and approved by the Landscape architect before planting soil is placed. The use of herbicides for vegetation removal shall be proposed only with the permission of the City of Leominster.

3.02 PLANTING SOIL PREPARATION, PLACEMENT, AND FINE GRADING

- A. Planting Soil Placement and Finished Grading:
 - 1. Subgrade, Proposed Grades, and Finished Grade Inspections: Contractor shall request inspections by the Landscape Architect of the finished subgrade, proposed finished grades as indicated by grade stakes, and finished grade planting soil for approval. Subgrade shall be roughly scarified with a claw before installing planting soil for plantings and seeded areas.
 - 2. Tolerances: Compacted, finished grades in planting and seeded areas shall deviate no more than 1 inch from indicated finish grade. Slopes shall be evenly graded with smooth lines and grades.
 - 3. Placement:
 - a. Planting soil shall be screened with 1/2"-inch screen before spreading. After planting soil has been spread in 8-inch lifts maximum, it shall be carefully prepared by scarifying or harrowing to mix interface of subsoil and planting soil, soil shall be hand raked, and lightly rolled. The whole surface shall then be raked to a smooth, uniform surface to lines and grade as shown on the Plans.

- b. Finished grading work shall not be done during wet, inclement, or freezing weather.
 - c. All depressions caused by settlement shall be filled with additional planting soil that matches approved planting soil and the surface shall be regraded and raked until a smooth and even finished grade is created.
 - d. Unless otherwise approved by the Landscape Architect, approved planting soil shall be placed to minimum depths after compaction and to rates as specified herein and as shown in the Drawings. Contractor shall be responsible to locate and protect irrigation system, utilities during all operations.
 - e. Planting soil structure shall not be destroyed through excessive and unnecessary handling or compaction or deterioration of soil structure which will result in rejection of planting soil for use. Compaction of planting soil shall be between 80 - 85% maximum dry densities as verified by soil compaction tests as required by the Landscape Architect. Compaction shall be obtained by light rolling, dragging or other method approved by the Landscape Architect to maximum 85% dry density. Do not over compact, or loosening and re-rolling of the soils will be required. The compaction of the soil shall be adjusted by soil type within the required maximums, with less compaction preferred in finer soils.
- B. Soil additive incorporation for planted areas:
- 1. Soil additives shall be spread and thoroughly incorporated into the planting soil by harrowing or other methods approved by the Landscape Architect. The following soil additives shall be incorporated:
 - a. Ground limestone is required by soil analysis to achieve a pH of 6.0 to 6.5, but the maximum amount applied shall be 1 pound per square yard. Limestone may not be mixed with fertilizer for application and shall be applied a minimum of two (2) weeks prior to fertilizer application.
 - b. Fertilizer (10-10-10) at the rate of five (5) pounds per 1,000 square feet, or more, as recommended by the soil analysis. Fertilizer may be applied hydraulically in one operation with hydroseeding and fiber mulching.
 - 2. Lime and fertilizer shall be spread mechanically rather than in one operation with hydroseeding:
 - a. After the planting soil is placed and before it is raked to true lines and rolled, limestone shall be spread evenly over planting soil surface and thoroughly incorporated with planting soil by heavy raking to a least one-half depth of planting soil.
 - b. Fertilizer shall be uniformly spread and immediately mixed with the upper 2-inches of topsoil.

3. Organic material and other bulk amendments (such as sand) required to be added to topsoil or mixed to make manufactured planting soil shall be thoroughly mixed in soil stockpile locations as specified in Article 3.01 or in a commercial facility, according to proportions determined by soil testing and approved mixing and test results, and not on grade after spreading.

3.03 PREPARATION OF SEEDED AREAS AND INCORPORATION OF ADDITIVES

A. Fine Grading of Seeded Areas and Preparation of the Seed Bed:

1. The whole surface shall then be fine graded by hand raking. Remove large stiff clods, lumps, brush, roots, stumps, litter and other foreign matter. Remove all stones over one half inch (1/2") in diameter from the top three inches (3") of the loam bed. Loam shall also be free of smaller stones in excessive quantities as determined by the Landscape architect.
2. If seed bed is proposed to be seeded by hand broadcasting, smooth surface to meet finished grades with raking and broadcast seed according to requirements specified. Compact with rolling after seeding. If bed is proposed to be drill seeded or hydroseeded, roll and compact bed before seeding. The surface shall be compacted with a roller or other suitable means to achieve a maximum dry density of 88 to 90% for the placed loam in accordance with compaction standards of ASTM D1557, Method D. During the compaction process, all depressions caused by settlement or rolling shall be filled with additional loam and the surface shall be regraded and rolled until presenting a smooth and even finish corresponding to the required grades.

B. Incorporation of Soil Additives in the Seed Bed:

1. Soil additives shall be spread and thoroughly incorporated into the top four (4) inches of the loam layer by harrowing or as part of hydroseed slurry as approved by the Landscape architect. The following soil additives shall be incorporated in areas to receive Lawn seeding only:
 - a. Ground limestone as required by soil analysis to achieve a pH of 6.0 to 6.5, but the maximum amount applied shall be one (1) pound per square yard. Soil as measured in a six inch profile in proposed seeded areas that has a pH greater than 7.5 at the time of seeding shall require application of acidifier to reduce the pH to acceptable levels upon retesting by the Contractor as reviewed by the Landscape architect.
 - b. Fertilizer shall be applied for areas prepared (Top Dressed and seeded) for Seeded Lawn at rates recommended by soil tests, but not in excess of 20 pounds per 1000 square feet and NOT within the Wetland Buffer Zone
2. It is expected that no or minimal fertilizer shall be required in Erosion Control/Restoration Seed Mix seeding areas. If soil testing determines that Modified Loam Borrow does not contain appropriate levels of nutrients for establishment of these native species, as determined by the Soil Testing Laboratory and reviewed by the Landscape architect, then the addition of these

nutrients and minerals shall be required to rates recommended by agronomist. Fertilizer shall not be applied in Water Quality Enhancement Area or in wetland buffer areas under any circumstances.

3.04 GENERAL INSTALLATION METHODS FOR SEEDED LAWN

- A. Seed shall be fresh, clean, new crop seed. Grass shall be of the previous year's crop and the weed seed content shall not exceed 1% by weight. Where possible, seed stock shall come from a local source. The seed shall be furnished and delivered, in the proportion specified, in new, clean, sealed, and properly labeled containers. All seed shall comply with State and Federal seed laws. Submit manufacturer's Certificates of Compliance. Seed which has become wet, moldy or otherwise damaged shall not be acceptable. The Contractor shall take care to handle and store the wildflower seed according to grower's recommendations and shall not subject the seed to extremes of heat, cold or moist conditions.
- B. Limits of seeding shall be as designated on plans and as directed by the Landscape Architect. All areas disturbed outside the limit of seeding shall also be seeded. Stake limits of Seeded Lawn before seeding, for review by the Landscape Architect, before seeding to ensure that proper seed mix is being installed to appropriate limits. Different methods for seeding are required, depending upon mix being installed.
 - 1. Application rates for Seeded Lawn Mix shall be: 6 lbs per 1,000 sq. ft.
- C. The planting of seed shall be done only during periods within the season, which is normal for such work as determined by weather conditions without additional compensation, but subject to the Landscape Architect's approval of time and methods.
 - 1. Seeding dates for lawn and shall be approximately April 1 - June 1 or August 15 - September 30.
 - 2. Seeding Lawn outside of season shall occur only with permission of the Landscape Architect and Engineer and may result in the requirement for re-preparing of seed bed and reseeding the following season until specifications requirements are met. Acceptance will not be given to seed outside of season until all the requirements of the specifications have been fulfilled and the lawns have met all grow-in requirements. Out-of-season seeding during hot weather will require shade mulching with netted hay-type erosion control fabric.
- D. Seed only when the bed is in friable condition, not muddy, dried, or frozen, and not in windy conditions or in weather where temperatures are expected to be less than 45 or higher than 75 degrees Fahrenheit during and for two (2) weeks after seeding. After seeding, the seed bed shall be thoroughly and evenly watered with a fine spray to penetrate the soil to a depth of at least six (6) inches, and the seed bed kept evenly moist until germination and acceptance.
- E. Prepared planting soil must be allowed to remain fallow for a minimum of three (3) weeks before seeding to encourage weedy growth from existing seed. Employ a turf specialist certified to apply herbicide to prepare the seed bed. Apply herbicide specifically formulated for this application to grassy weeds and common herbaceous weeds,

according to manufacturer's instructions, to reduce competition by weeds during germination and grow-in. Dead weeds shall be harvested and removed, and seed bed raked and lightly rolled before seeding. Live weed crop may also be removed by hand, but only if weed roots are completely removed.

- F. Protect all trees to remain with tree protection fencing during construction set to edge of canopy. All loaming and seed work within the fence limit must be done by hand with care not to disturb tree roots (no excavation) or fill more than 2" inches above existing grade. Fencing must remain until seeded lawn areas have been sown and fenced off with protective barriers.
- G. Seed shall be carefully sown and thoroughly raked in twice at right angles at each pass, overlapping by at least 25%, and lightly rolling after raking to ensure good soil to seed contact and even sowing. Specified rates for seeding shall meet or exceed requirements for any method used.

3.05 HYDROSEEDING SEEDED LAWNS

- A. Hydroseeding with hydromulch and tackifier shall be the preferred method for seeding all seeded areas. Utilize a mobile tank to hydroseed with a capacity of at least 500 gallons, filled with water and seed in quantities so it may be sprayed on prepared loamed bed prepared in the specified proportions per unit of area to be hydroseeded.
- B. The slurry shall be thoroughly mixed by means of positive agitation in the tank. The slurry shall be applied by means of a centrifugal pump using the turret or hose application technique from the mobile tank. The hose or turret shall be equipped with a nozzle of a proper design to ensure even distribution of the hydroseeding slurry over the area to be hydroseeded. The hose or turret shall be operated by a person thoroughly familiar with this type of seeding operation.
- C. Differing quantities of hydromulch, fertilizer, superphosphate, and limestone shall be included in slurry mix depending on seed type, application requirements, and recommendations for amendments based on the results of soil testing.
- D. For Hydroseeding seeded lawn, or top dressing and seeding follow all requirements above but include 40 lbs./ 1,000 sq. ft. hydromulch with tackifier in seed/water slurry mixture.

3.06 SOD INSTALLATION

- A. If areas are to be sodded, sod only during the planting season for sod, which shall be from April 1 to October 15. The actual planting of sod shall be done, however, only during periods within this season which are normal for such Work as determined by weather conditions and by accepted practice in this locality and approved by the Landscape Architect. Contractor may take responsibility for planting sod under unseasonable conditions, without additional compensation, and subject to the Landscape Architect's approval of time and methods.
- B. Schedule delivery of sod to arrive in time for immediate installation. If not planted immediately upon delivery, place in a shaded, ventilated area. Do not place plastic or

tarps directly over pallets of sod when in direct sun. Sprinkle to keep sod moist until installation. Do not allow root zone to become dry and brittle. Temporary sod storage will not be permitted for longer than three (3) days. Store so that there is no compression of thickness of sod below minimum required. Store flat sods in pairs of layers such that grass surfaces face each other. Keep piles sprinkled with water and covered with burlap or straw to keep moist but not wet. Sod that becomes dried out or broken shall be rejected by the Landscape Architect.

- C. Sod only when the bed is in a friable condition, not muddy, dry, hard or frozen. Immediately prior to laying sod, lightly roughen planting soil bed with fine-toothed harrow or hand rake to accept sod mat.
- D. Handle sod pieces carefully to prevent loosening and separation of planting soil from roots. Sod shall be laid in one direction with staggered joints. Seams of sod shall be tightly butted to each other or to edges of existing lawn with no overlap. All sod pieces shall be trimmed to fit irregular areas shall by evenly cutting or shearing vertically to fit the edge. After initial laying of sod, the sod shall be rolled to flatten all seams. Finished grade at all lawn areas shall be smooth. Seams determined by the Landscape Architect to be inadequately joined shall be rectified at no additional cost.
- E. In all swales and on slopes at or steeper than 3:1, hold sod in place by fastening alternate lines of sod with wooden pegs at least six (6) inches long, three (3) feet apart and driven flush with sod surface; other methods of fastening may be used at the Landscape Architect's approval. Pegging shall be done immediately after tamping. At least two (2) stakes shall be driven through each sod strip to be pegged and stakes shall be not more than two (2) feet apart. Stakes shall have their wider sides parallel to slope.
- F. All sod planted areas shall be watered immediately after installation, except if installed within three (3) hours of dusk, in which case, water immediately the following morning, adhering to the procedures below.

3.07 PREPARING AND TOP DRESSING OF AREAS TO BE OVERSEEDDED

- A. All areas of existing or damaged grass areas shall be top dressed and over seeded as directed by the Landscape architect. Mow existing grass to a height of three (3") inches before topdressing and over seeding. Remove and discard all grass clippings and debris from the site.
- B. Contractor shall spread approved, mechanically screened loam in areas of top dressing in accordance with planting soils requirements listed in this Section.

3.08 OVERSEEDING (ALL MIXES)

- A. Contractor shall obtain Landscape Architect's written approval of top dressing of screened loam before doing any seeding.
- B. Seed only when the top dressed bed is in a friable condition, not muddy or hard.

- C. Seed type and application rates for over seeding shall be the same as those listed in application rates for the particular seed mix specified for that area in locations as shown on the Drawings.
- D. To maximize seed to soil contact, drill or slice seeding is recommended for all areas to be over seeded. Mechanical seeding shall be undertaken in two separate passes at ninety degrees to each other. Rake soil lightly and roll to ensure seed is in firm contact with soil.
- E. Following rolling, thoroughly and evenly water seeded areas with a fine spray to penetrate the top dressed screened loam to a depth of at least 4 inches.

3.09 SEEDED LAWN PROTECTION AND MAINTENANCE

- A. Protection: Seeded and/or sodded areas shall be protected by a three (3) foot high barrier constructed of two (2) inch x two (2) inch wood stakes set 18 inches in the ground at eight (8) foot spacing supporting plastic snow fencing. Barriers must be raised immediately after seeding and shall be maintained until acceptance. Barriers must be removed at the request of the Landscape Architect and not later than two (2) weeks after acceptance. If grass within fencing is damaged for any reason and fencing has not been kept taut and secure by the Contractor, Contractor shall replace grass within two (2) weeks, if during the growing season for that grass, within first two (2) weeks of next growing season.
- B. Maintenance of Mown Lawns
 - 1. Lawn maintenance, reseeding, and repair to lawn shall be required during the one-year guarantee period for mown lawns.
 - 2. Watering: Watering shall be no less than two (2) inches of water per week within a given area, reduced by amount of natural rainfall at installation and between the months of April through October. Provide for daily watering of all grass areas to maintain moist soil to depth of at least six (6) inches. Apply one complete coverage of water in an 8-hour period. Sod shall be maintained in a continuously moist condition until establishment and rooting, satisfactory for good germination and growth. Water shall not be applied within three (3) hours of dusk unless specifically approved by the Landscape Architect. Prevent erosion due to excessive watering. Prevent damage to seeded areas by watering equipment. All Work areas injured or damaged due over- or under-watering shall be Contractor's responsibility to correct and at Contractor's expense.
 - 3. Fertilizing: Lawn fertilizing shall be required during the first and second growing seasons. Fertilizing is permissible only in April, May, August, or September, and not before two (2) months of growing time after seeding unless fertilizer is manufactured specifically for newly seeded lawns. Use 10-10-10 fertilizer applied at rate according to manufacturer's instructions for new lawns after germination. A second application of fertilizer, as specified herein, shall be applied to all seeded and sodded areas after one (1) season of growth of two (2) months duration. Fertilizer shall be applied only during the months of April, May, August or

September at rate according to manufacturer's instructions. Adjust nitrogen type and analysis for season of application (slow release in fall).

4. Re-sodding: The Contractor shall be responsible for maintenance to establish a uniform stand of the specified sod until Final Acceptance. Bare spots, discolored sections or portions that fail to knit properly to planting soil bed shall not be accepted. Sod seams shall not be visible at time of acceptance. After the grass has started, all failing areas shall be re-sodded repeatedly, utilizing sod of the same grass types and mixtures from the same supplier, until all areas are covered with a satisfactory growth of grass.
5. Disease and insect control: Application of all preventative and reactive insecticides or fungicides shall be performed by a turf specialist certified by the Commonwealth of Massachusetts and only after submittal and approval by the Landscape Architect of materials, methods, application rates and schedule and permission of the Owner. The use of granular materials is typically preferred over spray applications.
6. Mowing: At the time of the first cutting, mow lawn not less than 3 inches high. Grass shall be maintained between 3 inches and three and a half (3 ½") inches high between April and October 30. Do not remove more than 1/3 of the grass blade at any one time. The last mowing of the season, typically in late October, shall be shorter, typically 1½ inches high, with all lawn areas raked and completely vacuumed of thatch, leaves, and debris. Mowing shall include the mulching of clippings on lawns as well as removal of clippings from pavement surfaces immediately after mowing.
7. Instructions: Furnish complete written instructions for maintenance of lawn to the City of Leominster at least ten (10) days prior to the end of the contractual maintenance period, to familiarize the City with the maintenance requirements for proper care and development of the lawn.

3.10 ACCEPTANCE AND GUARANTEE PERIOD OF MOWN LAWNS

A. Seeded and/or Sodded Lawns:

1. Following the one year minimum initial establishment period after germination for lawn areas which includes a minimum of three (3) mowing to 3" height, when lawn reaches 3.5" height; Contractor shall request an inspection by the Landscape Architect for acceptance of the Work and the beginning of the one-year guarantee and maintenance period for mown lawns. All seeded and/or sodded lawns shall display a uniform, dense and tightly knitted stand of grass with no weeds present and no bare spots greater than three (3) inches in diameter over greater than 5% of the overall area. At least 90% of the grass established shall be permanent grass species. These grow-in requirements shall be met at initial acceptance and at the end of the one year guarantee and maintenance period.

- B. Contractor shall request that the Landscape Architect inspect the seeded or sodded areas at the end of the one-year guarantee period after initial acceptance. Contractor shall weed, re- seed, lime, apply disease or insect controls, water, fertilize, or re-sod as

required to meet the requirements indicated above, and maintain repaired or refurbished lawns and seeded areas in the manner required and methods indicated above until establishment and acceptance of the corrected work.

3.11 SCHEDULING OF PLANTING

A. Locate plant material sources and ensure that plants are shipped in timely fashion for installation. All trees shall be planted during the same planting season they are dug. Balled and burlapped and potted plant materials from cold storage shall be rejected.

B. Seasons for Planting:

Spring:

Deciduous and Evergreen materials:	April 1 through June 15
Perennials and Groundcovers:	April 15 through June 1

Fall:

Deciduous materials:	October 1 through November 15
Evergreen materials:	April 1 through November 1

1. Summer digging of trees shall not be permitted for any reason. Contractor shall schedule his work and coordinate his schedule for planting, so that summer digging and substitutions of species that are fall hazards (fall digging/planting) does not occur.
2. Contractor shall secure plant material as soon as possible and with recent Massachusetts's regulations in mind regarding importing clean out of state nursery stock inspected for the Oak bark beetle.
3. Refer to the Drawings for Fall Hazard Species, such as certain Oaks, Maples, Birch, etc: These species must be planted in the spring and substitutions shall not be permitted without approval of the Landscape Architect.
4. Evergreens planted in April or July-August, or out of season shall be sprayed with anti-desiccant twice during the guarantee period, once at planting and once in mid-winter.

3.12 PLANT MATERIAL DELIVERY, STORAGE AND HANDLING

- A. Deliver and plant only freshly dug trees. Do not use plants "heeled-in" from previous season. Balled and burlapped plant materials from cold storage shall be rejected. Do not prune before delivery, except as approved by the Landscape Architect. Protect bark, branches, and root systems from sunscald, drying, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy natural shape. Provide protective covering during delivery.
- B. Contractor shall be present at time of delivery of all plants to the site. Remove all tree wrapping at delivery and inspect tree trunks for damage. Report damaged plants immediately to the Landscape Architect. Wrap shall not be replaced except as specified herein.

- C. Handle balled and burlapped stock by root ball, not by trunk or branches.
- D. Deliver trees after preparations for planting have been completed and install immediately. If planting is delayed more than six (6) hours after delivery, set plants vertically in their natural growing orientation in shade, protect from weather, dust and mechanical damage, and keep roots moist. Set balled stock on ground or heeled into ground, and cover ball with soil, mulch, or as approved by the Landscape Architect. Storage for more than two (2) weeks shall not be allowed without permission from the Landscape Architect. Plant damage due to Contractor's planting delay shall be the responsibility of the Contractor.
- E. Water root systems of trees stored on site with a fine-mist spray. Water as often as necessary to keep root systems moist during storage and planting.
- F. Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from damage during delivery and while stored at site.

3.13 UNDERDRAINAGE

- A. Testing Pits for drainage:
 - 1. Notify the Landscape Architect of five representative tree pits to be tested at least ten days in advance of the testing day. A representative of the Landscape Architect shall be present during all percolation testing. Locate areas where tree planting will occur as shown on the Drawings. Test existing drainage capacity, percolation, of subsoil that shall exist at time of planting in a minimum of five sample tree pits. Tree pits shall be representative of the different tree planting areas of project site. The test shall be conducted by filling representative pits with a minimum of ten (10) gallons of water draining within a ten-minute period.
 - 2. Prepare a report indicating pits tested, numbered pit locations on a site plan, time it took for pits to drain after filling, and submit the result to the Landscape Architect with analysis. If water has not completely drained from pit within two hours, an underdrainage system shall be designed by the Contractor, submitted to the Landscape Architect for approval, and installed by the Contractor for trees in areas where drainage failed. Plant elevations may have to be adjusted, locations changed, or underdrainage lines installed to compensate for drainage problems at no additional cost.

3.14 TREE AND SHRUB PLANTING

- A. Fill entire shrub bed or planting area to depths indicated on Drawings with approved planting soil, according to requirements in Article 2.01.
- B. Take care not to disturb any adjacent site improvements. If, in the opinion of the Landscape Architect, any damage to adjacent materials occurs as a result of planting operations, repair the damaged materials at no cost to the City of Leominster and/or the Landscape Architect.

- C. Stake location for all trees for review by the Landscape Architect before any plant pits or beds are dug, and before plant delivery to site. Stake locations with stakes or flagging, outline planting areas for massed planting, and obtain the Landscape Architect's review and acceptance before the start of planting work. The Landscape Architect reserves the right to determine the exact location of every tree and to change the location of any tree to an area of similar conditions.
- D. Keep plant roots and earth balls moist and protect from sun and wind during entire planting operation.
- E. Set balled and burlapped stock plumb in staked location. If top of rootball needs to be raised to conform to proposed finished grade, use leveling bed of compacted planting soil or existing subgrade to set ball. Set top of root ball for trees slightly higher ($\frac{1}{2}$ inches) than surrounding grade, judging planting height to allow for settling, to meet grade after settling as plant grew in nursery; refer to detail drawing. Scarify soils on sides of pit to facilitate integration of backfill with existing soil for better root penetration as plants grow. Roll back top 12 inches of burlap and remove wire baskets from tops and sides of ball but do not remove materials from under large tree root balls. Planting stock with root balls cracked or broken before or during planting operation will be cause for rejection. Remove all non-biodegradable wrapping or binding material or containers from shrubs.
- F. Place planting soil around ball in six-inch layers, tamping to settle backfill and eliminate air pockets. When pit is approximately half backfilled, water thoroughly until no more is absorbed. Water again after placing and tamping final layer of backfill. Compact planting soil and planting soil mix to approximately 85% maximum dry density. Do not overcompact planting areas; the Landscape Architect reserves the right to reject overcompacted soil installation and request removal and replacement of soil and plants.
- G. All plant roots and earth balls shall be damp and thoroughly protected from sun and wind from the beginning of the digging operation, during transportation and at the site until the final planting. Remove container plants from containers prior to planting. All plants shall be planted in the center of the holes and at the same depth as they previously grew. After completion of planting installations, remove rope, wires, etc. from the top of the root balls. Remove burlap only from top third of root ball. Planting soil mix shall be backfilled in layers of not more than 6 inches and each layer watered sufficiently to settle before the next layer is put in place. Enough planting soil mix shall be used to bring the surface to finished grade when settled. A saucer shall be formed around each plant at a depth of 6 inches for trees and 4 inches for shrubs. All trees shall be planted 3 inches higher than the surrounding grade beyond the saucer.
- H. Plant Fertilizing
 - 1. Fertilizer packets for plants: Install one-half of the fertilizer packets at a depth of six (6) to eight (8) inches equally spaced around the plant 12 inches from the root ball, as planting soil is placed. Packets shall not be cut, ripped or damaged. If it becomes necessary to remove and replace dead or unhealthy plants, used packets shall be replaced with new packets. The application rates for fertilizer packets shall be as follows:

<u>Type of Plant</u>	<u>Rate</u>
----------------------	-------------

Deciduous Shade Tree	One packet for each inch of caliper or four (4) packets, minimum for 3 ½-4 inch cal. tree.
Evergreen Tree	One packet for every 18 inches of height
Shrub	One packet for every 12 inches of height.

- I. Within one (1) day of planting, place mulch to 3" depth as indicated on detail drawings, over saucer areas of individual trees and over area of planting beds to a depth of three (3) inches after settlement. No mulch shall be spread within 4-inch diameter from tree or shrub trunk. Mounding of mulch will not be permitted.
- J. All plants shall be watered immediately following planting as necessary to thoroughly moisten rootball and planting soil and thereafter shall be inspected frequently for watering needs and watered, as required, to provide adequate moisture in the planting pit. Inspect tree pits 24 hours after initial watering to confirm that they are draining properly. If surface water or excessively saturated plant pit soils exist, immediately notify the Landscape Architect.

3.15 PLANTING OF CONTAINERIZED MATERIALS

- A. Planting of containerized materials shall follow guidelines specified above, except that all containers shall be removed before planting. Plants that are pot bound may be rejected by Landscape Architect. Rough-up and open up the sides of the balls of species which have tough, fibrous roots, to ensure that roots will spread into the planting soil after establishment. Hand spread granular, pelletized superphosphate in the bottom of each plant pit, in amounts according to manufacturer's instructions and fertilize as required herein.
- B. Fertilizer for Perennials: Plant beds of groundcover and perennials shall be fertilized with granular fertilizer with analysis of 10 -10-10 NPK, at rates recommended by the manufacturer, with consideration of the nutrient and salt analysis of the planting. Wash down plants with potable water after hand spreading fertilizer.

3.16 TREE PRUNING

- A. Pruning shall be done only to ameliorate minor damage to branches incurred during shipping and planting. Any plants with major damage shall be replaced as directed by the Landscape Architect. Remove only dead wood, damaged branches, crossed branches, and suckering shoots, in accordance with TCIA standards, minimizing amount of live growth removed. Shape trees only if additional direction is given by the Landscape Architect, maintaining natural form. Tree pruning shall be consistent to full height of tree to avoid uneven appearance and structural imbalance. Do not apply tree wound dressing. Prune in accordance with TCIA Standards for Class I, "Fine Pruning," to preserve natural character of the plant.
- B. Never cut tree leader, unless permitted by the Landscape Architect.

3.17 TREE WRAPPING

- A. Trees and trunks shall be wrapped with protective fabric during transport and delivery to storage. Trees shall not be wrapped after planting, to avoid accumulation of moisture on bark, which increases susceptibility to hidden insect infestation and mold.

3.18 GUYING AND STAKING

- A. Contractor shall use caution in installing wood deadmen anchors for trees, insuring that deadmen do not penetrate utility lines or structures. Deadmen should be installed according to the Drawings, securely anchored in undisturbed or compacted subgrade.
- B. Install woven tape tree guys according to manufacturer's instructions, with ties that allow for tree growth (specified, expandable knots) and to allow for some movement and to avoid girdling. Guys shall be securely fastened to notched wood deadmen with appropriate knots, at an angle to keep guys tight. Install three (3) guys per tree, typical, and affix safety flags at four (4) feet typical above finished grade if guys are above ground.
- C. Tree guying and anchoring systems shall be secure, installed so that tree ball does not rock and tree trunk and canopy remain plumb or nearly plumb in the wind, without holding tree so tight or at such an angle and height that there could be rubbing or structural damage to trunk in strong winds. Guys shall be installed to allow for tightening after installation and during the one-year maintenance period.

3.19 CLEANUP AND PROTECTION

- A. Protect work from damage due to landscape operations, operations by other contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged Work as directed by the Landscape Architect.
- B. Remove excess planting soil, waste material, and excess subsoil, unsuitable soil, trash, and debris, and legally dispose of material off site.
- C. Repair damage to site or structures to restore them to their original condition at no cost to the Owner.

3.20 MAINTENANCE REQUIREMENTS FOR PLANTINGS

- A. Begin maintenance immediately after each area is planted and continue until the end of the one-year guarantee period after Final Acceptance (including replacements).
- B. Maintenance shall consist of keeping plants in healthy growing condition and shall include but not be limited to watering, weeding saucers, grass areas, and planting beds, mowing, cultivating, re-mulching, tightening and repairing of guys, removal of trash, injured and dead material, resetting plants to proper grades or upright position, and maintaining mulched planting saucer.
- C. Inspect plants for watering needs at least twice each week and water as required to promote plant growth and vitality.

- D. Keep planting and grass areas free of weeds and maintain mulched saucers at required depths and size.
- E. Remove and replace immediately plants that die during the maintenance period and repair, re-seed, or re-sod all lawn areas and erosion control devices, from installation through the one (1) year guarantee period.
- F. Tighten guy tapes as required.
- G. Chemicals, pesticides, fungicides, insecticides or herbicides within planted areas shall be applied by personnel licensed to do so in the Commonwealth of Massachusetts and only after obtaining written permission from the Landscape Architect, indicating the materials and dispensing methods allowed, the dates, time and weather conditions under which procedures will occur, and traffic control, resident and pedestrian protection plan proposed. Spraying for insects, pests and diseases shall conform to the TCIA Standards under the section entitled "Standards for Pesticide Application Operations", as currently adopted.
- H. Remove trash from all planted areas weekly or as directed by the City of Leominster.
- I. During the maintenance period, any decline in the condition of plantings shall require the Contractor to take immediate action to identify potential problems and undertake corrective measures. If required, the Contractor shall engage professional arborists and horticulturists to inspect plant materials and to identify problems and recommend corrective procedures. The Landscape Architect shall be immediately advised of such actions. Inspection and recommendation reports shall be submitted to the City of Leominster.

3.21 ACCEPTANCE INSPECTION PROCEDURES

- A. Requirements of Division 01 shall apply to this Section.
- B. The Landscape Architect shall inspect work upon written request of Contractor, which shall be received by the Landscape Architect at least ten (10) days before the anticipated dates of inspection. Request inspection for acceptance of the plantings only after all aspects of planting operations are completed and maintained according to Specifications, all pertaining test results are acceptable, irrigation system is operating properly, and all extraneous equipment, materials and debris are removed from the project site. Do not request inspections for partially completed work. There will be no acceptance 'in parts' for planting work. All items on the punch list shall be completed to the satisfaction of the Landscape Architect before the initiation of the one-year plant establishment period (guarantee period) can commence.
- C. The Landscape Architect shall inspect work with Contractor present. At time of inspection if, in the Landscape Architect's opinion, a substantial amount of planting, materials or workmanship is deficient, Contractor's responsibility for maintenance of all work shall be extended until plant replacements are made, or other deficiencies are corrected.
- D. A written report, or "punch list," issued by the Landscape Architect shall indicate to Contractor remedial items to be corrected before Final Acceptance is given.

- E. Acceptance: Acceptable plants are those that are to size and species as shown on the Drawings or accepted by the Landscape Architect, which show at least 85% live growth, actively growing or possessing live buds, with no indication of injury, disease, insect infestation, or decline due to environmental or other factors, which are plumb, mulched, guyed (if just planted), and root balls moist.
- F. All unsatisfactory plants shall be removed promptly. Replacement plants shall conform in all respects to Specifications for the originals and shall be planted and maintained in the same manner until initial acceptance is made.
- G. Inspection request and procedure shall be repeated when remedial items are completed. Date of final acceptance of completed remedial work shall establish end of installation and initial maintenance period and commencement of guarantee period.
- H. Submit typed maintenance instructions for all plantings for the Landscape Architect's review prior to issuing to the City of Leominster.

3.22 PLANT ESTABLISHMENT PERIOD, GUARANTEE, AND FINAL INSPECTION

- A. Guarantee specified herein shall not deprive the City of Leominster of other rights it may have under other provisions of Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of Contract Documents.
- B. The Contractor shall guarantee the plantings for one (1) year after acceptance. During guarantee period, make monthly inspections of plant material during April through November to document condition of plants and to provide remedial measures. Continue maintenance as specified. Submit inspection reports to the Landscape Architect. Dead plants and plants with less than 85% live wood noted in inspections shall be replaced with new plants of same size and species within one (1) month or in first month of next growing season, whichever comes first, as permitted by specifications. Replacement plants shall be installed according to the Drawings and Specifications.
- C. Notify the Landscape Architect at least ten (10) days in advance of requested date of inspection at end of one-year guarantee period. Submit to the Landscape Architect, before inspection, a list of plants replaced during guarantee period with species, location, and replacement dates.
- D. All plants will be inspected by the Landscape Architect one (1) year after final acceptance and shall be alive and in satisfactory growth at the end of that time. Trees, which have settled out of plumb shall be reset plumb or be replaced.
- E. At end of guarantee period, all guying material shall be removed from plants, all saucers flattened, mulch areas re-mulched and weeded, dead wood pruned and removed, and all replacements completed. All dead or unsatisfactory grass areas shall be weeded, top-dressed, repaired, fertilized, and/or bed prepared and re-seeded until satisfactory growth with intended species has occurred, as a condition of completion of all Work at final inspection.

PART 4 - COMPENSATION

4.01 METHOD OF MEASUREMENT

- A. PLANTING SOIL; will be measured per CUBIC YARD, installed, complete-in-place including fine grading, labor, materials, excavation, testing, submittals, transportation, screening, placement and equipment required or incidental for the satisfactory completion of the work.
- B. SEEDED LAWN; will be measured per SQUARE YARD, installed complete-in-place including all excavation, grading, fine grading, compaction, seeding, maintenance, mowing, labor, materials, excavation, watering and equipment required or incidental for the satisfactory completion of the work.
- C. AMELANCHIER CANDADENSIS TREE PLANTING will be measured per EACH, installed, complete-in-place including all plant materials, mulch, maintenance, pruning, labor, materials, excavation, grading, fine grading, compaction, watering, and equipment required or incidental for the satisfactory completion of the work.
- D. CRATAEGUS VIRIDIS 'WINTER KING' TREE PLANTING will be measured per EACH, installed, complete-in-place including all plant materials, mulch, maintenance, pruning, labor, materials, excavation, grading, fine grading, compaction, watering, and equipment required or incidental for the satisfactory completion of the work.
- E. JUNIPERUS VIRGINIANA TREE PLANTING will be measured per EACH, installed, complete-in-place including all plant materials, mulch, maintenance, pruning, labor, materials, excavation, grading, fine grading, compaction, watering and equipment required or incidental for the satisfactory completion of the work.
- F. LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA' TREE PLANTING will be measured per EACH, installed, complete-in-place including all plant materials, mulch, maintenance, pruning, labor, materials, excavation, grading, fine grading, compaction, watering and equipment required or incidental for the satisfactory completion of the work
- G. NYSSA SYLVATICA TREE PLANTING will be measured per EACH, installed, complete-in-place including all plant materials, mulch, maintenance, pruning, labor, materials, excavation, grading, fine grading, compaction, watering, and equipment required or incidental for the satisfactory completion of the work.
- H. CORNUS SERICEA SHRUB PLANTING will be measured per EACH, installed, complete-in-place including all plant materials, mulch, maintenance, pruning, labor, materials, excavation, grading, fine grading, compaction, watering, and equipment required or incidental for the satisfactory completion of the work.
- I. ILEX GLABRA 'SHAMROCK' SHRUB PLANTING will be measured per EACH, installed, complete-in-place including all plant materials, mulch, maintenance, pruning, labor, materials, excavation, grading, fine grading, compaction, watering and equipment required or incidental for the satisfactory completion of the work.

- J. VIBURNUM TRILOBUM SHRUB PLANTING will be measured per EACH, installed, complete-in-place including all plant materials, mulch, maintenance, pruning, labor, materials, excavation, grading, fine grading, compaction, watering and equipment required or incidental for the satisfactory completion of the work
- K. HEMEROCALLIS 'JOAN SENIOR' PERENNIAL PLANTING will be measured per EACH, installed, complete-in-place including all plant materials, mulch, maintenance, pruning, labor, materials, excavation, grading, fine grading, compaction, watering, and equipment required or incidental for the satisfactory completion of the work.
- L. HEMEROCALLIS 'ROSY RETURNS' PERENNIAL PLANTING will be measured per EACH, installed, complete-in-place including all plant materials, mulch, maintenance, pruning, labor, materials, excavation, grading, fine grading, compaction, watering, and equipment required or incidental for the satisfactory completion of the work.
- M. SYMPHYTOTRICHUM NOVAE-ANGLIAE PERENNIAL PLANTING will be measured per EACH, installed, complete-in-place including all plant materials, mulch, maintenance, pruning, labor, materials, excavation, grading, fine grading, compaction, watering and equipment required or incidental for the satisfactory completion of the work.
- N. RUDBECKIA FULGIDA 'GOLDSTURM' PERENNIAL PLANTING will be measured per EACH, installed, complete-in-place including all plant materials, mulch, maintenance, pruning, labor, materials, excavation, grading, fine grading, compaction, watering and equipment required or incidental for the satisfactory completion of the work

4.02 BASIS OF PAYMENT

- A. All seeding Items will be paid for at the Contract Unit Price and shall include all labor and materials required such as preparation, seeding, compaction, excavation, watering, and maintenance of the seeded area until Final Acceptance.
- B. Rough Grading of Site and Fine Grading of ALL planted and non-planted areas is the Work of Section 31 00 00 – EARTHWORK.
- C. Tree prices shall include but not be limited to: all items required for submittals, materials, labor, transporting, planting, storing, nursery tagging, excavation, watering, maintenance and guarantee, mulch and guying materials until Final Acceptance.
- D. Planting Soil will be measured and paid for separately.

4.03 PAYMENT ITEMS

ITEM NO.	ITEM	UNIT
32 90 00.01	Planting Soil	CUBIC YARD
32 90 00.02	Seeded Lawn	SQUARE YARD
32 90 00.03	Amelanchier canadensis, 6'-8' height (clump)	EACH

Twin Cities Rail Trail Phase III
The City of Leominster
Leominster, MA

Bid Set
December 11, 2024

32 90 00.04	Crataegus viridis 'Winter King', 2.5"-3" cal.	EACH
32 90 00.05	Juniperus virginiana, 5'-6' height	EACH
32 90 00.06	Liquidambar styraciflua 'Rotundiloba', 3.5"-4" cal.	EACH
32 90 00.07	Nyssa sylvatica, 3.5"-4" cal.	EACH
32 90 00.08	Cornus sericea, 7 gal.	EACH
32 90 00.09	Ilex glabra 'Shamrock', 7 gal.	EACH
32 90 00.10	Viburnum trilobum, 7 gal.	EACH
32 90 00.11	Hemerocallis 'Joan Senior', 1 gal.	EACH
32 90 00.12	Hemerocallis, 'Rosy Returns', 1 gal.	EACH
32 90 00.13	Symphyotrichum novae-angliae, 1 gal.	EACH
32 90 00.14	Rudbeckia fulgida 'Goldsturm', 1 gal.	EACH

END OF SECTION

SECTION 33 40 00
STORMWATER UTILITIES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Include the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.
- B. Examine all other Sections of the specifications for requirements which affect Work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under the Contract.
- D. The work shall conform to the relevant provisions of the Commonwealth of Massachusetts Department of Transportation (MassDOT) Standard Specifications for Highways and Bridges 2024 Edition and the Supplemental Specifications.

1.02 SUMMARY

- A. This Section specifies requirements for the following types of work and related items, but is not limited to furnishing all labor, tools, equipment and materials and performing all operations necessary to install piping, valves and appurtenances as indicated by the Contract Drawings, as specified herein or as required by the Engineer:
 - 1. Rebuilding, removing, replacing, discarding and adjusting the masonry and castings of present structures, as required, to conform to newly proposed line and grade changes.
 - 2. Removing sediment and debris from existing drainage structures

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. The following related work is to be performed under the designated SECTIONS:
 - 1. Section 01 53 00 – TEMPORARY CONSTRUCTION
 - 2. Section 03 30 00 – CAST IN PLACE CONCRETE
 - 3. Section 32 05 05 – SELECTIVE DEMOLITION

PART 2 - PRODUCTS

2.01 MASONRY FOR DRAINAGE STRUCTURE REMODELED

- A. Products used shall meet the requirements of Section 220 of the Standard Specifications.

PART 3 - EXECUTION

3.01 DRAINAGE STRUCTURE REMODELED

- A. Methods of execution used shall meet the requirements of Section 220 of the Standard Specifications.

PART 4 - COMPENSATION

4.01 MEASUREMENT

- A. Measurement of items shall be in accordance with Sections 220, and 227 of the Standard Specifications.

4.02 PAYMENT

- A. Payment of items shall be in accordance with Sections 220 and 227 of the Standard Specifications.

4.03 PAYMENT ITEMS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
33 40 00.01	DRAINAGE STRUCTURE REMODELED	EACH

END OF SECTION

"ATTACHMENT A"

[Wage Rates]



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: Leominster, City of

Contract Number:

City/Town: LEOMINSTER

Description of Work: Twin Cities Rail Trail Phase 3

Job Location: multiple

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 updated wage schedule must be provided to all contractors, including general and sub-contractors, working on the construction project.
- This annual update requirement is generally not applicable to 27F "rental of equipment" contracts. For such contracts, the prevailing wage rates issued by DLS shall remain in effect for the duration of the contract term. However, if the prevailing wage rate sheet issued does not contain wage rates for each year covered by the contract term, the Awarding Authority must request updated rate sheets from DLS and provide them to the contractor to ensure the correct rates are being paid throughout the duration of the contract. Additionally, if an Awarding Authority exercises an option to renew or extend the contract term, they must request updated rate sheets from DLS and provide them to the contractor.
- This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the "Wage Request Number" on all pages of this schedule.
- An Awarding Authority must request an updated wage schedule if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule. For CM AT RISK projects (bid pursuant to G.L. c.149A), the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work must be within 90-days of the wage schedule issuance date.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. The wage schedule shall be made a part of the contract awarded for the project. The wage schedule must be posted in a conspicuous place at the work site for the life of the project in accordance with M.G.L. c. 149 § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project whether they are employed by the prime contractor, a filed sub-bidder, or a sub-contractor.
- Apprentices working on the project are required to be registered with the Massachusetts Division of Apprentice Standards (DAS). Apprentices must keep their apprentice identification card on their persons during all work hours on the project. An apprentice registered with DAS may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. **Any apprentice not registered with DAS regardless of whether they are registered with another federal, state, local, or private agency must be paid the journeyworker's rate.**
- Every contractor or subcontractor working on the construction project must submit weekly payroll reports and a Statement of Compliance directly to the awarding authority by mail or email and keep them on file for three years. Each weekly payroll report must contain: the employee's name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. For a sample payroll reporting form go to <http://www.mass.gov/dols/pw>.
- Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
- Contractors must obtain the wage schedules from awarding authorities. Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and criminal penalties.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may file a complaint with the Fair Labor Division of the office of the Attorney General at (617) 727-3465.

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Construction						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2024	\$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>	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>	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>	08/01/2024	\$117.16	\$10.08	\$24.29	\$0.00	\$151.53
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.61	\$9.65	\$17.70	\$0.00	\$67.96
	06/01/2025	\$42.00	\$9.65	\$17.70	\$0.00	\$69.35
	12/01/2025	\$43.38	\$9.65	\$17.70	\$0.00	\$70.73
	06/01/2026	\$44.82	\$9.65	\$17.70	\$0.00	\$72.17
	12/01/2026	\$46.26	\$9.65	\$17.70	\$0.00	\$73.61
	06/01/2027	\$47.71	\$9.65	\$17.70	\$0.00	\$75.06
	12/01/2027	\$49.16	\$9.65	\$17.70	\$0.00	\$76.51
	06/01/2028	\$50.66	\$9.65	\$17.70	\$0.00	\$78.01
	12/01/2028	\$52.16	\$9.65	\$17.70	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$40.61	\$9.65	\$17.80	\$0.00	\$68.06
	06/01/2025	\$42.00	\$9.65	\$17.80	\$0.00	\$69.45
	12/01/2025	\$43.38	\$9.65	\$17.80	\$0.00	\$70.83
	06/01/2026	\$44.82	\$9.65	\$17.80	\$0.00	\$72.27
	12/01/2026	\$46.26	\$9.65	\$17.80	\$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 & FROST INSULATORS LOCAL 6 (WORCESTER)</i>	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>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01	
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$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>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01	
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.61	\$9.65	\$17.70	\$0.00	\$67.96
	06/01/2025	\$42.00	\$9.65	\$17.70	\$0.00	\$69.35
	12/01/2025	\$43.38	\$9.65	\$17.70	\$0.00	\$70.73
	06/01/2026	\$44.82	\$9.65	\$17.70	\$0.00	\$72.17
	12/01/2026	\$46.26	\$9.65	\$17.70	\$0.00	\$73.61
	06/01/2027	\$47.71	\$9.65	\$17.70	\$0.00	\$75.06
	12/01/2027	\$49.16	\$9.65	\$17.70	\$0.00	\$76.51
	06/01/2028	\$50.66	\$9.65	\$17.70	\$0.00	\$78.01
	12/01/2028	\$52.16	\$9.65	\$17.70	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$40.61	\$9.65	\$17.80	\$0.00	\$68.06
	06/01/2025	\$42.00	\$9.65	\$17.80	\$0.00	\$69.45
	12/01/2025	\$43.38	\$9.65	\$17.80	\$0.00	\$70.83
	06/01/2026	\$44.82	\$9.65	\$17.80	\$0.00	\$72.27
	12/01/2026	\$46.26	\$9.65	\$17.80	\$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

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) <i>BRICKLAYERS LOCAL 3 (LOWELL)</i>	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

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

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

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.83	\$11.49	\$22.90	\$0.00	\$66.22
2	60	\$38.20	\$11.49	\$22.90	\$0.00	\$72.59
3	70	\$44.56	\$11.49	\$22.90	\$0.00	\$78.95
4	80	\$50.93	\$11.49	\$22.90	\$0.00	\$85.32
5	90	\$57.29	\$11.49	\$22.90	\$0.00	\$91.68

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
<i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

CAISSON & UNDERPINNING BOTTOM MAN	12/01/2024	\$48.10	\$9.65	\$18.22	\$0.00	\$75.97
<i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2025	\$49.60	\$9.65	\$18.22	\$0.00	\$77.47
	12/01/2025	\$51.10	\$9.65	\$18.22	\$0.00	\$78.97
	06/01/2026	\$52.65	\$9.65	\$18.22	\$0.00	\$80.52
	12/01/2026	\$54.15	\$9.65	\$18.22	\$0.00	\$82.02

For apprentice rates see "Apprentice- LABORER"

CAISSON & UNDERPINNING LABORER	12/01/2024	\$46.95	\$9.65	\$18.22	\$0.00	\$74.82
<i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2025	\$48.45	\$9.65	\$18.22	\$0.00	\$76.32
	12/01/2025	\$49.95	\$9.65	\$18.22	\$0.00	\$77.82
	06/01/2026	\$51.50	\$9.65	\$18.22	\$0.00	\$79.37
	12/01/2026	\$53.00	\$9.65	\$18.22	\$0.00	\$80.87

For apprentice rates see "Apprentice- LABORER"

CAISSON & UNDERPINNING TOP MAN	12/01/2024	\$47.28	\$9.65	\$18.22	\$0.00	\$75.15
<i>LABORERS - FOUNDATION AND MARINE</i>	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"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	09/01/2024	\$48.37	\$9.83	\$19.97	\$0.00	\$78.17
	03/01/2025	\$49.62	\$9.83	\$19.97	\$0.00	\$79.42
	09/01/2025	\$50.87	\$9.83	\$19.97	\$0.00	\$80.67
	03/01/2026	\$52.12	\$9.83	\$19.97	\$0.00	\$81.92
	09/01/2026	\$53.37	\$9.83	\$19.97	\$0.00	\$83.17
	03/01/2027	\$54.62	\$9.83	\$19.97	\$0.00	\$84.42

Apprentice - CARPENTER - Zone 2 Eastern MA

Effective Date - 09/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$21.77	\$9.83	\$1.73	\$0.00	\$33.33
2	45	\$21.77	\$9.83	\$1.73	\$0.00	\$33.33
3	55	\$26.60	\$9.83	\$3.40	\$0.00	\$39.83
4	55	\$26.60	\$9.83	\$3.40	\$0.00	\$39.83
5	70	\$33.86	\$9.83	\$16.51	\$0.00	\$60.20
6	70	\$33.86	\$9.83	\$16.51	\$0.00	\$60.20
7	80	\$38.70	\$9.83	\$18.24	\$0.00	\$66.77
8	80	\$38.70	\$9.83	\$18.24	\$0.00	\$66.77

Effective Date - 03/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$22.33	\$9.83	\$1.73	\$0.00	\$33.89
2	45	\$22.33	\$9.83	\$1.73	\$0.00	\$33.89
3	55	\$27.29	\$9.83	\$3.40	\$0.00	\$40.52
4	55	\$27.29	\$9.83	\$3.40	\$0.00	\$40.52
5	70	\$34.73	\$9.83	\$16.51	\$0.00	\$61.07
6	70	\$34.73	\$9.83	\$16.51	\$0.00	\$61.07
7	80	\$39.70	\$9.83	\$18.24	\$0.00	\$67.77
8	80	\$39.70	\$9.83	\$18.24	\$0.00	\$67.77

Notes:

Apprentice to Journeyworker Ratio:1:5

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARPENTER WOOD FRAME <i>CARPENTERS-ZONE 3 (Wood Frame)</i>	10/01/2024	\$26.65	\$7.02	\$4.80	\$0.00	\$38.47
	10/01/2025	\$27.75	\$7.02	\$4.80	\$0.00	\$39.57
	10/01/2026	\$28.85	\$7.02	\$4.80	\$0.00	\$40.67

All Aspects of New Wood Frame Work

Apprentice - CARPENTER (Wood Frame) - Zone 3

Effective Date - 10/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$15.99	\$7.02	\$0.00	\$0.00	\$23.01
2	60	\$15.99	\$7.02	\$0.00	\$0.00	\$23.01
3	65	\$17.32	\$7.02	\$1.00	\$0.00	\$25.34
4	70	\$18.66	\$7.02	\$1.00	\$0.00	\$26.68
5	75	\$19.99	\$7.02	\$4.80	\$0.00	\$31.81
6	80	\$21.32	\$7.02	\$4.80	\$0.00	\$33.14
7	85	\$22.65	\$7.02	\$4.80	\$0.00	\$34.47
8	90	\$23.99	\$7.02	\$4.80	\$0.00	\$35.81

Effective Date - 10/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.65	\$7.02	\$0.00	\$0.00	\$23.67
2	60	\$16.65	\$7.02	\$0.00	\$0.00	\$23.67
3	65	\$18.04	\$7.02	\$1.00	\$0.00	\$26.06
4	70	\$19.43	\$7.02	\$1.00	\$0.00	\$27.45
5	75	\$20.81	\$7.02	\$4.80	\$0.00	\$32.63
6	80	\$22.20	\$7.02	\$4.80	\$0.00	\$34.02
7	85	\$23.59	\$7.02	\$4.80	\$0.00	\$35.41
8	90	\$24.98	\$7.02	\$4.80	\$0.00	\$36.80

Notes:

Apprentice to Journeyworker Ratio:1:5

CEMENT MASONRY/PLASTERING <i>BRICKLAYERS LOCAL 3 (LOWELL)</i>	01/01/2024	\$49.33	\$13.00	\$23.57	\$1.30	\$87.20
--	------------	---------	---------	---------	--------	---------

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES OPERATING ENGINEERS LOCAL 4	12/01/2024	\$58.18	\$15.55	\$16.50	\$0.00	\$90.23
	06/01/2025	\$59.51	\$15.55	\$16.50	\$0.00	\$91.56
	12/01/2025	\$60.98	\$15.55	\$16.50	\$0.00	\$93.03
	06/01/2026	\$62.31	\$15.55	\$16.50	\$0.00	\$94.36
	12/01/2026	\$63.79	\$15.55	\$16.50	\$0.00	\$95.84

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

COMPRESSOR OPERATOR OPERATING ENGINEERS LOCAL 4	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

DELEADER (BRIDGE) PAINTERS LOCAL 35 - ZONE 2	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

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

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

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.23	\$9.95	\$0.00	\$0.00	\$39.18
2	55	\$32.15	\$9.95	\$6.66	\$0.00	\$48.76
3	60	\$35.08	\$9.95	\$7.26	\$0.00	\$52.29
4	65	\$38.00	\$9.95	\$7.87	\$0.00	\$55.82
5	70	\$40.92	\$9.95	\$20.32	\$0.00	\$71.19
6	75	\$43.85	\$9.95	\$20.93	\$0.00	\$74.73
7	80	\$46.77	\$9.95	\$21.53	\$0.00	\$78.25
8	90	\$52.61	\$9.95	\$22.74	\$0.00	\$85.30

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

DEMO: ADZEMAN	12/02/2024	\$47.00	\$9.65	\$18.40	\$0.00	\$75.05
LABORERS - ZONE 2	06/02/2025	\$48.50	\$9.65	\$18.40	\$0.00	\$76.55
	12/01/2025	\$50.00	\$9.65	\$18.40	\$0.00	\$78.05
	06/01/2026	\$51.55	\$9.65	\$18.40	\$0.00	\$79.60
	12/07/2026	\$53.05	\$9.65	\$18.40	\$0.00	\$81.10
	06/07/2027	\$54.65	\$9.65	\$18.40	\$0.00	\$82.70
	12/06/2027	\$56.25	\$9.65	\$18.40	\$0.00	\$84.30
	06/05/2028	\$57.93	\$9.65	\$18.40	\$0.00	\$85.98
	12/04/2028	\$59.60	\$9.65	\$18.40	\$0.00	\$87.65

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: BACKHOE/LOADER/HAMMER OPERATOR <i>LABORERS - ZONE 2</i>	12/02/2024	\$48.00	\$9.65	\$18.40	\$0.00	\$76.05
	06/02/2025	\$49.50	\$9.65	\$18.40	\$0.00	\$77.55
	12/01/2025	\$51.00	\$9.65	\$18.40	\$0.00	\$79.05
	06/01/2026	\$52.55	\$9.65	\$18.40	\$0.00	\$80.60
	12/07/2026	\$54.05	\$9.65	\$18.40	\$0.00	\$82.10
	06/07/2027	\$55.65	\$9.65	\$18.40	\$0.00	\$83.70
	12/06/2027	\$57.25	\$9.65	\$18.40	\$0.00	\$85.30
	06/05/2028	\$58.93	\$9.65	\$18.40	\$0.00	\$86.98
	12/04/2028	\$60.60	\$9.65	\$18.40	\$0.00	\$88.65
For apprentice rates see "Apprentice- LABORER"						
DEMO: BURNERS <i>LABORERS - ZONE 2</i>	12/02/2024	\$47.75	\$9.65	\$18.40	\$0.00	\$75.80
	06/02/2025	\$49.25	\$9.65	\$18.40	\$0.00	\$77.30
	12/01/2025	\$50.75	\$9.65	\$18.40	\$0.00	\$78.80
	06/01/2026	\$52.30	\$9.65	\$18.40	\$0.00	\$80.35
	12/07/2026	\$53.80	\$9.65	\$18.40	\$0.00	\$81.85
	06/07/2027	\$55.40	\$9.65	\$18.40	\$0.00	\$83.45
	12/06/2027	\$57.00	\$9.65	\$18.40	\$0.00	\$85.05
	06/05/2028	\$58.68	\$9.65	\$18.40	\$0.00	\$86.73
	12/04/2028	\$60.35	\$9.65	\$18.40	\$0.00	\$88.40
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 2</i>	12/02/2024	\$48.00	\$9.65	\$18.40	\$0.00	\$76.05
	06/02/2025	\$49.50	\$9.65	\$18.40	\$0.00	\$77.55
	12/01/2025	\$51.00	\$9.65	\$18.40	\$0.00	\$79.05
	06/01/2026	\$52.55	\$9.65	\$18.40	\$0.00	\$80.60
	12/07/2026	\$54.05	\$9.65	\$18.40	\$0.00	\$82.10
	06/07/2027	\$55.65	\$9.65	\$18.40	\$0.00	\$83.70
	12/06/2027	\$57.25	\$9.65	\$18.40	\$0.00	\$85.30
	06/05/2028	\$58.93	\$9.65	\$18.40	\$0.00	\$86.98
	12/04/2028	\$60.60	\$9.65	\$18.40	\$0.00	\$88.65
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 2</i>	12/02/2024	\$47.75	\$9.65	\$18.40	\$0.00	\$75.80
	06/02/2025	\$49.25	\$9.65	\$18.40	\$0.00	\$77.30
	12/01/2025	\$50.75	\$9.65	\$18.40	\$0.00	\$78.80
	06/01/2026	\$52.30	\$9.65	\$18.40	\$0.00	\$80.35
	12/07/2026	\$53.80	\$9.65	\$18.40	\$0.00	\$81.85
	06/07/2027	\$55.40	\$9.65	\$18.40	\$0.00	\$83.45
	12/06/2027	\$57.00	\$9.65	\$18.40	\$0.00	\$85.05
	06/05/2028	\$58.68	\$9.65	\$18.40	\$0.00	\$86.73
	12/04/2028	\$60.35	\$9.65	\$18.40	\$0.00	\$88.40
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: WRECKING LABORER <i>LABORERS - ZONE 2</i>	12/02/2024	\$47.00	\$9.65	\$18.40	\$0.00	\$75.05
	06/02/2025	\$48.50	\$9.65	\$18.40	\$0.00	\$76.55
	12/01/2025	\$50.00	\$9.65	\$18.40	\$0.00	\$78.05
	06/01/2026	\$51.55	\$9.65	\$18.40	\$0.00	\$79.60
	12/07/2026	\$53.05	\$9.65	\$18.40	\$0.00	\$81.10
	06/07/2027	\$54.65	\$9.65	\$18.40	\$0.00	\$82.70
	12/06/2027	\$56.25	\$9.65	\$18.40	\$0.00	\$84.30
	06/05/2028	\$57.93	\$9.65	\$18.40	\$0.00	\$85.98
	12/04/2028	\$59.60	\$9.65	\$18.40	\$0.00	\$87.65
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2024	\$78.11	\$10.08	\$24.29	\$0.00	\$112.48
	as of 8-1-24, Apprentices with diving licenses begin at second year. % of Diver wage 70/80/90 2A \$69.83, 3A \$91.79,4A \$102.14 Total Rate					
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2024	\$51.97	\$10.08	\$24.29	\$0.00	\$86.34
	as of 8-1-24, Apprentices with diving licenses begin at second year. % of Piledriver wage 70/80/90 2A \$54.20, 3A \$73.93,4A \$82.05 Total Rate					
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2024	\$83.69	\$10.08	\$24.29	\$0.00	\$118.06
	For apprentice rates see "Apprentice- PILE DRIVER"					
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2024	\$117.16	\$10.08	\$24.29	\$0.00	\$151.53
	For apprentice rates see "Apprentice- PILE DRIVER"					
DRAWBRIDGE OPERATOR (Construction) <i>DRAWBRIDGE - SEIU LOCAL 888</i>	07/01/2020	\$26.77	\$6.67	\$3.93	\$0.16	\$37.53
ELECTRICIAN <i>ELECTRICIANS LOCAL 96</i>	09/01/2024	\$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

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - ELECTRICIAN - Local 96

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

Effective Date - 09/07/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$19.26	\$14.98	\$0.58	\$0.00	\$34.82
2	45	\$21.67	\$14.98	\$0.65	\$0.00	\$37.30
3	48	\$23.12	\$14.98	\$16.09	\$0.00	\$54.19
4	55	\$26.49	\$14.98	\$16.57	\$0.00	\$58.04
5	65	\$31.30	\$14.98	\$17.25	\$0.00	\$63.53
6	80	\$38.53	\$14.98	\$18.26	\$0.00	\$71.77

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

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 <i>ELEVATOR CONSTRUCTORS LOCAL 41</i>	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) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21

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

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2024	\$51.78	\$15.30	\$16.40	\$0.00	\$83.48
	05/01/2025	\$53.22	\$15.30	\$16.40	\$0.00	\$84.92
	11/01/2025	\$54.51	\$15.30	\$16.40	\$0.00	\$86.21
	05/01/2026	\$55.95	\$15.30	\$16.40	\$0.00	\$87.65
	11/01/2026	\$57.24	\$15.30	\$16.40	\$0.00	\$88.94
	05/01/2027	\$58.67	\$15.30	\$16.40	\$0.00	\$90.37

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2024	\$53.37	\$15.30	\$16.40	\$0.00	\$85.07
	05/01/2025	\$54.82	\$15.30	\$16.40	\$0.00	\$86.52
	11/01/2025	\$56.12	\$15.30	\$16.40	\$0.00	\$87.82
	05/01/2026	\$57.57	\$15.30	\$16.40	\$0.00	\$89.27
	11/01/2026	\$58.87	\$15.30	\$16.40	\$0.00	\$90.57
	05/01/2027	\$60.32	\$15.30	\$16.40	\$0.00	\$92.02

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2024	\$25.37	\$15.30	\$16.40	\$0.00	\$57.07
	05/01/2025	\$26.22	\$15.30	\$16.40	\$0.00	\$57.92
	11/01/2025	\$26.98	\$15.30	\$16.40	\$0.00	\$58.68
	05/01/2026	\$27.83	\$15.30	\$16.40	\$0.00	\$59.53
	11/01/2026	\$28.59	\$15.30	\$16.40	\$0.00	\$60.29
	05/01/2027	\$29.44	\$15.30	\$16.40	\$0.00	\$61.14
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 96</i>	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>	09/01/2024	\$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>	12/01/2024	\$45.96	\$15.55	\$16.50	\$0.00	\$78.01
	06/01/2025	\$47.02	\$15.55	\$16.50	\$0.00	\$79.07
	12/01/2025	\$48.19	\$15.55	\$16.50	\$0.00	\$80.24
	06/01/2026	\$49.25	\$15.55	\$16.50	\$0.00	\$81.30
	12/01/2026	\$50.43	\$15.55	\$16.50	\$0.00	\$82.48
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$27.01	\$9.65	\$17.80	\$0.00	\$54.46
	06/01/2025	\$28.09	\$9.65	\$17.80	\$0.00	\$55.54
	12/01/2025	\$28.09	\$9.65	\$17.80	\$0.00	\$55.54
	06/01/2026	\$29.21	\$9.65	\$17.80	\$0.00	\$56.66
	12/01/2026	\$29.21	\$9.65	\$17.80	\$0.00	\$56.66
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE II</i>	03/01/2024	\$49.47	\$8.83	\$20.27	\$0.00	\$78.57

Apprentice - FLOORCOVERER - Local 2168 Zone II

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	07/01/2024	\$46.76	\$9.95	\$23.95	\$0.00	\$80.66
	01/01/2025	\$47.96	\$9.95	\$23.95	\$0.00	\$81.86

Apprentice - GLAZIER - Local 35 Zone 2

Effective Date - 07/01/2024

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

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.98	\$9.95	\$0.00	\$0.00	\$33.93
2	55	\$26.38	\$9.95	\$6.66	\$0.00	\$42.99
3	60	\$28.78	\$9.95	\$7.26	\$0.00	\$45.99
4	65	\$31.17	\$9.95	\$7.87	\$0.00	\$48.99
5	70	\$33.57	\$9.95	\$20.32	\$0.00	\$63.84
6	75	\$35.97	\$9.95	\$20.93	\$0.00	\$66.85
7	80	\$38.37	\$9.95	\$21.53	\$0.00	\$69.85
8	90	\$43.16	\$9.95	\$22.74	\$0.00	\$75.85

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HOISTING ENGINEER/CRANES/GRADALLS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58

Apprentice - OPERATING ENGINEERS - Local 4

Effective Date - 12/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$31.37	\$0.00	\$0.00	\$0.00	\$31.37
2	60	\$34.22	\$15.55	\$16.50	\$0.00	\$66.27
3	65	\$37.07	\$15.55	\$16.50	\$0.00	\$69.12
4	70	\$39.92	\$15.55	\$16.50	\$0.00	\$71.97
5	75	\$42.77	\$15.55	\$16.50	\$0.00	\$74.82
6	80	\$45.62	\$15.55	\$16.50	\$0.00	\$77.67
7	85	\$48.48	\$15.55	\$16.50	\$0.00	\$80.53
8	90	\$51.33	\$15.55	\$16.50	\$0.00	\$83.38

Effective Date - 06/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$32.08	\$0.00	\$0.00	\$0.00	\$32.08
2	60	\$35.00	\$15.55	\$16.50	\$0.00	\$67.05
3	65	\$37.91	\$15.55	\$16.50	\$0.00	\$69.96
4	70	\$40.83	\$15.55	\$16.50	\$0.00	\$72.88
5	75	\$43.75	\$15.55	\$16.50	\$0.00	\$75.80
6	80	\$46.66	\$15.55	\$16.50	\$0.00	\$78.71
7	85	\$49.58	\$15.55	\$16.50	\$0.00	\$81.63
8	90	\$52.50	\$15.55	\$16.50	\$0.00	\$84.55

Notes:

Apprentice to Journeyworker Ratio:1:6

HVAC (DUCTWORK) <i>SHEETMETAL WORKERS LOCAL 63</i>	07/01/2024	\$40.98	\$12.20	\$18.74	\$2.13	\$74.05
	01/01/2025	\$42.23	\$12.20	\$18.74	\$2.13	\$75.30
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 96</i>	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) <i>SHEETMETAL WORKERS LOCAL 63</i>	07/01/2024	\$40.98	\$12.20	\$18.74	\$2.13	\$74.05
	01/01/2025	\$42.23	\$12.20	\$18.74	\$2.13	\$75.30
For apprentice rates see "Apprentice- SHEET METAL WORKER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC (TESTING AND BALANCING -WATER) <i>PLUMBERS LOCAL 4</i>	09/01/2024	\$55.00	\$9.90	\$17.77	\$0.00	\$82.67
	03/01/2025	\$56.40	\$9.90	\$17.77	\$0.00	\$84.07
	09/01/2025	\$57.80	\$9.90	\$17.77	\$0.00	\$85.47
	03/01/2026	\$59.20	\$9.90	\$17.77	\$0.00	\$86.87
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PLUMBERS LOCAL 4</i>	09/01/2024	\$55.00	\$9.90	\$17.77	\$0.00	\$82.67
	03/01/2025	\$56.40	\$9.90	\$17.77	\$0.00	\$84.07
	09/01/2025	\$57.80	\$9.90	\$17.77	\$0.00	\$85.47
	03/01/2026	\$59.20	\$9.90	\$17.77	\$0.00	\$86.87
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.61	\$9.65	\$17.70	\$0.00	\$67.96
	06/01/2025	\$42.00	\$9.65	\$17.70	\$0.00	\$69.35
	12/01/2025	\$43.38	\$9.65	\$17.70	\$0.00	\$70.73
	06/01/2026	\$44.82	\$9.65	\$17.70	\$0.00	\$72.17
	12/01/2026	\$46.26	\$9.65	\$17.70	\$0.00	\$73.61
	06/01/2027	\$47.71	\$9.65	\$17.70	\$0.00	\$75.06
	12/01/2027	\$49.16	\$9.65	\$17.70	\$0.00	\$76.51
	06/01/2028	\$50.66	\$9.65	\$17.70	\$0.00	\$78.01
12/01/2028	\$52.16	\$9.65	\$17.70	\$0.00	\$79.51	
For apprentice rates see "Apprentice- LABORER"						
HYDRAULIC DRILLS (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$40.61	\$9.65	\$17.80	\$0.00	\$68.06
	06/01/2025	\$42.00	\$9.65	\$17.80	\$0.00	\$69.45
	12/01/2025	\$43.38	\$9.65	\$17.80	\$0.00	\$70.83
	06/01/2026	\$44.82	\$9.65	\$17.80	\$0.00	\$72.27
	12/01/2026	\$46.26	\$9.65	\$17.80	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
INSULATOR (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (WORCESTER)</i>	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

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

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

Effective Date - 09/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.16	\$14.75	\$14.32	\$0.00	\$56.23
2	60	\$32.59	\$14.75	\$15.37	\$0.00	\$62.71
3	70	\$38.02	\$14.75	\$16.43	\$0.00	\$69.20
4	80	\$43.45	\$14.75	\$17.49	\$0.00	\$75.69

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER <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 - 03/16/2024

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

JACKHAMMER & PAVING BREAKER OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
LABORER	12/01/2024	\$39.86	\$9.65	\$17.70	\$0.00	\$67.21
LABORERS - ZONE 2	06/01/2025	\$41.25	\$9.65	\$17.70	\$0.00	\$68.60
	12/01/2025	\$42.63	\$9.65	\$17.70	\$0.00	\$69.98
	06/01/2026	\$44.07	\$9.65	\$17.70	\$0.00	\$71.42
	12/01/2026	\$45.51	\$9.65	\$17.70	\$0.00	\$72.86
	06/01/2027	\$46.96	\$9.65	\$17.70	\$0.00	\$74.31
	12/01/2027	\$48.41	\$9.65	\$17.70	\$0.00	\$75.76
	06/01/2028	\$49.91	\$9.65	\$17.70	\$0.00	\$77.26
	12/01/2028	\$51.41	\$9.65	\$17.70	\$0.00	\$78.76

Apprentice - LABORER - Zone 2

Effective Date - 12/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.92	\$9.65	\$17.70	\$0.00	\$51.27
2	70	\$27.90	\$9.65	\$17.70	\$0.00	\$55.25
3	80	\$31.89	\$9.65	\$17.70	\$0.00	\$59.24
4	90	\$35.87	\$9.65	\$17.70	\$0.00	\$63.22

Effective Date - 06/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.75	\$9.65	\$17.70	\$0.00	\$52.10
2	70	\$28.88	\$9.65	\$17.70	\$0.00	\$56.23
3	80	\$33.00	\$9.65	\$17.70	\$0.00	\$60.35
4	90	\$37.13	\$9.65	\$17.70	\$0.00	\$64.48

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER (HEAVY & HIGHWAY)	12/01/2024	\$39.86	\$9.65	\$17.80	\$0.00	\$67.31
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2025	\$41.25	\$9.65	\$17.80	\$0.00	\$68.70
	12/01/2025	\$42.63	\$9.65	\$17.80	\$0.00	\$70.08
	06/01/2026	\$44.07	\$9.65	\$17.80	\$0.00	\$71.52
	12/01/2026	\$45.51	\$9.65	\$17.80	\$0.00	\$72.96

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - LABORER (Heavy & Highway) - Zone 2

Effective Date - 12/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.92	\$9.65	\$17.80	\$0.00	\$51.37
2	70	\$27.90	\$9.65	\$17.80	\$0.00	\$55.35
3	80	\$31.89	\$9.65	\$17.80	\$0.00	\$59.34
4	90	\$35.87	\$9.65	\$17.80	\$0.00	\$63.32

Effective Date - 06/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.75	\$9.65	\$17.80	\$0.00	\$52.20
2	70	\$28.88	\$9.65	\$17.80	\$0.00	\$56.33
3	80	\$33.00	\$9.65	\$17.80	\$0.00	\$60.45
4	90	\$37.13	\$9.65	\$17.80	\$0.00	\$64.58

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER: CARPENTER TENDER LABORERS - ZONE 2	12/01/2024	\$39.86	\$9.65	\$17.70	\$0.00	\$67.21
	06/01/2025	\$41.25	\$9.65	\$17.70	\$0.00	\$68.60
	12/01/2025	\$42.63	\$9.65	\$17.70	\$0.00	\$69.98
	06/01/2026	\$44.07	\$9.65	\$17.70	\$0.00	\$71.42
	12/01/2026	\$45.51	\$9.65	\$17.70	\$0.00	\$72.86
	06/01/2027	\$46.96	\$9.65	\$17.70	\$0.00	\$74.31
	12/01/2027	\$48.41	\$9.65	\$17.70	\$0.00	\$75.76
	06/01/2028	\$49.91	\$9.65	\$17.70	\$0.00	\$77.26
	12/01/2028	\$51.41	\$9.65	\$17.70	\$0.00	\$78.76

For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER LABORERS - ZONE 2	12/01/2024	\$39.86	\$9.65	\$17.70	\$0.00	\$67.21
	06/01/2025	\$41.25	\$9.65	\$17.70	\$0.00	\$68.60
	12/01/2025	\$42.63	\$9.65	\$17.70	\$0.00	\$69.98
	06/01/2026	\$44.07	\$9.65	\$17.70	\$0.00	\$71.42
	12/01/2026	\$45.51	\$9.65	\$17.70	\$0.00	\$72.86
	06/01/2027	\$46.96	\$9.65	\$17.70	\$0.00	\$74.31
	12/01/2027	\$48.41	\$9.65	\$17.70	\$0.00	\$75.76
	06/01/2028	\$49.91	\$9.65	\$17.70	\$0.00	\$77.26
	12/01/2028	\$51.41	\$9.65	\$17.70	\$0.00	\$78.76

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER <i>LABORERS - ZONE 2</i>	12/02/2024	\$39.95	\$9.65	\$17.76	\$0.00	\$67.36
	06/02/2025	\$41.34	\$9.65	\$17.76	\$0.00	\$68.75
	12/01/2025	\$42.72	\$9.65	\$17.76	\$0.00	\$70.13
	06/01/2026	\$44.16	\$9.65	\$17.76	\$0.00	\$71.57
	12/07/2026	\$45.60	\$9.65	\$17.76	\$0.00	\$73.01
	06/07/2027	\$47.05	\$9.65	\$17.76	\$0.00	\$74.46
	12/06/2027	\$48.50	\$9.65	\$17.76	\$0.00	\$75.91
	06/05/2028	\$50.00	\$9.65	\$17.76	\$0.00	\$77.41
	12/04/2028	\$51.50	\$9.65	\$17.76	\$0.00	\$78.91
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.86	\$9.65	\$17.70	\$0.00	\$67.21
	06/01/2025	\$41.25	\$9.65	\$17.70	\$0.00	\$68.60
	12/01/2025	\$42.63	\$9.65	\$17.70	\$0.00	\$69.98
	06/01/2026	\$44.07	\$9.65	\$17.70	\$0.00	\$71.42
	12/01/2026	\$45.51	\$9.65	\$17.70	\$0.00	\$72.86
	06/01/2027	\$46.96	\$9.65	\$17.70	\$0.00	\$74.31
	12/01/2027	\$48.41	\$9.65	\$17.70	\$0.00	\$75.76
	06/01/2028	\$49.91	\$9.65	\$17.70	\$0.00	\$77.26
	12/01/2028	\$51.41	\$9.65	\$17.70	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.86	\$9.65	\$17.70	\$0.00	\$67.21
	06/01/2025	\$41.25	\$9.65	\$17.70	\$0.00	\$68.60
	12/01/2025	\$42.63	\$9.65	\$17.70	\$0.00	\$69.98
	06/01/2026	\$44.07	\$9.65	\$17.70	\$0.00	\$71.42
	12/01/2026	\$45.51	\$9.65	\$17.70	\$0.00	\$72.86
	06/01/2027	\$46.96	\$9.65	\$17.70	\$0.00	\$74.31
	12/01/2027	\$48.41	\$9.65	\$17.70	\$0.00	\$75.76
	06/01/2028	\$49.91	\$9.65	\$17.70	\$0.00	\$77.26
	12/01/2028	\$51.41	\$9.65	\$17.70	\$0.00	\$78.76

This classification applies to the removal of standing trees, and the trimming and removal of branches and limbs when related to public works construction or site clearance incidental to construction . For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LASER BEAM OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

LASER BEAM OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21

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

MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2024	\$49.32	\$11.49	\$21.62	\$0.00	\$82.43
	02/01/2025	\$50.36	\$11.49	\$21.62	\$0.00	\$83.47
	08/01/2025	\$52.08	\$11.49	\$21.62	\$0.00	\$85.19
	02/01/2026	\$53.16	\$11.49	\$21.62	\$0.00	\$86.27
	08/01/2026	\$54.92	\$11.49	\$21.62	\$0.00	\$88.03
	02/01/2027	\$56.04	\$11.49	\$21.62	\$0.00	\$89.15

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

Effective Date - 08/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.66	\$11.49	\$21.62	\$0.00	\$57.77
2	60	\$29.59	\$11.49	\$21.62	\$0.00	\$62.70
3	70	\$34.52	\$11.49	\$21.62	\$0.00	\$67.63
4	80	\$39.46	\$11.49	\$21.62	\$0.00	\$72.57
5	90	\$44.39	\$11.49	\$21.62	\$0.00	\$77.50

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.18	\$11.49	\$21.62	\$0.00	\$58.29
2	60	\$30.22	\$11.49	\$21.62	\$0.00	\$63.33
3	70	\$35.25	\$11.49	\$21.62	\$0.00	\$68.36
4	80	\$40.29	\$11.49	\$21.62	\$0.00	\$73.40
5	90	\$45.32	\$11.49	\$21.62	\$0.00	\$78.43

Notes:

Apprentice to Journeyworker Ratio:1:3

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
MARBLE MASONS, TILELAYERS & TERRAZZO MECH <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	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

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

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

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.91	\$11.49	\$23.56	\$0.00	\$67.96
2	60	\$39.49	\$11.49	\$23.56	\$0.00	\$74.54
3	70	\$46.07	\$11.49	\$23.56	\$0.00	\$81.12
4	80	\$52.66	\$11.49	\$23.56	\$0.00	\$87.71
5	90	\$59.24	\$11.49	\$23.56	\$0.00	\$94.29

Notes:

Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 3) <i>MILLWRIGHTS LOCAL 1121 - Zone 3</i>	01/01/2024	\$41.20	\$10.08	\$21.22	\$0.00	\$72.50
	01/06/2025	\$43.48	\$10.08	\$21.22	\$0.00	\$74.78
	01/05/2026	\$45.76	\$10.08	\$21.22	\$0.00	\$77.06

Apprentice - MILLWRIGHT - Local 1121 Zone 3

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$22.66	\$10.08	\$5.36	\$0.00	\$38.10
2	65	\$26.78	\$10.08	\$6.34	\$0.00	\$43.20
3	75	\$30.90	\$10.08	\$18.78	\$0.00	\$59.76
4	85	\$35.02	\$10.08	\$19.76	\$0.00	\$64.86

Effective Date - 01/06/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$23.91	\$10.08	\$5.36	\$0.00	\$39.35
2	65	\$28.26	\$10.08	\$6.34	\$0.00	\$44.68
3	75	\$32.61	\$10.08	\$18.78	\$0.00	\$61.47
4	85	\$36.96	\$10.08	\$19.76	\$0.00	\$66.80

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

Apprentice to Journeyworker Ratio:1:4

MORTAR MIXER <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

OILER (OTHER THAN TRUCK CRANES,GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$25.37	\$15.30	\$16.40	\$0.00	\$57.07
	06/01/2025	\$25.97	\$15.30	\$16.40	\$0.00	\$57.67
	12/01/2025	\$26.63	\$15.30	\$16.40	\$0.00	\$58.33
	06/01/2026	\$27.22	\$15.30	\$16.40	\$0.00	\$58.92
	12/01/2026	\$27.89	\$15.30	\$16.40	\$0.00	\$59.59

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OILER (TRUCK CRANES, GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$31.08	\$15.30	\$16.40	\$0.00	\$62.78
	06/01/2025	\$31.80	\$15.30	\$16.40	\$0.00	\$63.50
	12/01/2025	\$32.60	\$15.30	\$16.40	\$0.00	\$64.30
	06/01/2026	\$33.32	\$15.30	\$16.40	\$0.00	\$65.02
	12/01/2026	\$34.12	\$15.30	\$16.40	\$0.00	\$65.82

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
OTHER POWER DRIVEN EQUIPMENT - CLASS II <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

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

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 07/01/2024

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

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.23	\$9.95	\$0.00	\$0.00	\$39.18
2	55	\$32.15	\$9.95	\$6.66	\$0.00	\$48.76
3	60	\$35.08	\$9.95	\$7.26	\$0.00	\$52.29
4	65	\$38.00	\$9.95	\$7.87	\$0.00	\$55.82
5	70	\$40.92	\$9.95	\$20.32	\$0.00	\$71.19
6	75	\$43.85	\$9.95	\$20.93	\$0.00	\$74.73
7	80	\$46.77	\$9.95	\$21.53	\$0.00	\$78.25
8	90	\$52.61	\$9.95	\$22.74	\$0.00	\$85.30

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

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

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

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

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.68	\$9.95	\$0.00	\$0.00	\$34.63
2	55	\$27.15	\$9.95	\$6.66	\$0.00	\$43.76
3	60	\$29.62	\$9.95	\$7.26	\$0.00	\$46.83
4	65	\$32.08	\$9.95	\$7.87	\$0.00	\$49.90
5	70	\$34.55	\$9.95	\$20.32	\$0.00	\$64.82
6	75	\$37.02	\$9.95	\$20.93	\$0.00	\$67.90
7	80	\$39.49	\$9.95	\$21.53	\$0.00	\$70.97
8	90	\$44.42	\$9.95	\$22.74	\$0.00	\$77.11

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

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

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

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

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.71	\$9.95	\$0.00	\$0.00	\$33.66
2	55	\$26.08	\$9.95	\$6.66	\$0.00	\$42.69
3	60	\$28.45	\$9.95	\$7.26	\$0.00	\$45.66
4	65	\$30.82	\$9.95	\$7.87	\$0.00	\$48.64
5	70	\$33.19	\$9.95	\$20.32	\$0.00	\$63.46
6	75	\$35.57	\$9.95	\$20.93	\$0.00	\$66.45
7	80	\$37.94	\$9.95	\$21.53	\$0.00	\$69.42
8	90	\$42.68	\$9.95	\$22.74	\$0.00	\$75.37

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

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

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW

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

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.98	\$9.95	\$0.00	\$0.00	\$33.93
2	55	\$26.38	\$9.95	\$6.66	\$0.00	\$42.99
3	60	\$28.78	\$9.95	\$7.26	\$0.00	\$45.99
4	65	\$31.17	\$9.95	\$7.87	\$0.00	\$48.99
5	70	\$33.57	\$9.95	\$20.32	\$0.00	\$63.84
6	75	\$35.97	\$9.95	\$20.93	\$0.00	\$66.85
7	80	\$38.37	\$9.95	\$21.53	\$0.00	\$69.85
8	90	\$43.16	\$9.95	\$22.74	\$0.00	\$75.85

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)	07/01/2024	\$44.82	\$9.95	\$23.95	\$0.00	\$78.72
PAINTERS LOCAL 35 - ZONE 2	01/01/2025	\$46.02	\$9.95	\$23.95	\$0.00	\$79.92

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT

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

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.01	\$9.95	\$0.00	\$0.00	\$32.96
2	55	\$25.31	\$9.95	\$6.66	\$0.00	\$41.92
3	60	\$27.61	\$9.95	\$7.26	\$0.00	\$44.82
4	65	\$29.91	\$9.95	\$7.87	\$0.00	\$47.73
5	70	\$32.21	\$9.95	\$20.32	\$0.00	\$62.48
6	75	\$34.52	\$9.95	\$20.93	\$0.00	\$65.40
7	80	\$36.82	\$9.95	\$21.53	\$0.00	\$68.30
8	90	\$41.42	\$9.95	\$22.74	\$0.00	\$74.11

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY)	12/01/2024	\$39.86	\$9.65	\$17.80	\$0.00	\$67.31
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2025	\$41.25	\$9.65	\$17.80	\$0.00	\$68.70
	12/01/2025	\$42.63	\$9.65	\$17.80	\$0.00	\$70.08
	06/01/2026	\$44.07	\$9.65	\$17.80	\$0.00	\$71.52
	12/01/2026	\$45.51	\$9.65	\$17.80	\$0.00	\$72.96

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

PANEL & PICKUP TRUCKS DRIVER	12/01/2024	\$39.78	\$15.07	\$20.17	\$0.00	\$75.02
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	01/01/2025	\$39.78	\$15.57	\$20.17	\$0.00	\$75.52
	06/01/2025	\$40.78	\$15.57	\$20.17	\$0.00	\$76.52
	12/01/2025	\$40.78	\$15.57	\$21.78	\$0.00	\$78.13
	01/01/2026	\$40.78	\$16.17	\$21.78	\$0.00	\$78.73
	06/01/2026	\$41.78	\$16.17	\$21.78	\$0.00	\$79.73
	12/01/2026	\$41.78	\$16.17	\$23.52	\$0.00	\$81.47
	01/01/2027	\$41.78	\$16.77	\$23.52	\$0.00	\$82.07

PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK)	08/01/2024	\$51.97	\$10.08	\$24.29	\$0.00	\$86.34
---	------------	---------	---------	---------	--------	---------

PILE DRIVER LOCAL 56 (ZONE 2)

For apprentice rates see "Apprentice- PILE DRIVER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2024	\$51.97	\$10.08	\$24.29	\$0.00	\$86.34

Apprentice - PILE DRIVER - Local 56 Zone 2

Effective Date - 08/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$23.39	\$10.08	\$2.53	\$0.00	\$36.00
2	55	\$28.58	\$10.08	\$5.07	\$0.00	\$43.73
3	70	\$36.38	\$10.08	\$19.22	\$0.00	\$65.68
4	80	\$41.58	\$10.08	\$21.76	\$0.00	\$73.42

Notes:

% Indentured BEFORE 8/1/2020, 50/60/70/75/80/80/90/90
Step 1 \$60.36/2 \$65.75/3 \$70.75/4 \$73.35/5&6 \$75.95/7&8 81.14

Apprentice to Journeyworker Ratio:1:5

PIPELAYER <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

PIPELAYER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21

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

PLUMBER & PIPEFITTER <i>PLUMBERS LOCAL 4</i>	09/01/2024	\$55.00	\$9.90	\$17.77	\$0.00	\$82.67
	03/01/2025	\$56.40	\$9.90	\$17.77	\$0.00	\$84.07
	09/01/2025	\$57.80	\$9.90	\$17.77	\$0.00	\$85.47
	03/01/2026	\$59.20	\$9.90	\$17.77	\$0.00	\$86.87

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PLUMBER/PIPEFITTER - Local 4

Effective Date - 09/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$22.00	\$9.90	\$0.00	\$0.00	\$31.90
2	50	\$27.50	\$9.90	\$0.00	\$0.00	\$37.40
3	60	\$33.00	\$9.90	\$0.00	\$0.00	\$42.90
4	70	\$38.50	\$9.90	\$8.06	\$0.00	\$56.46
5	80	\$44.00	\$9.90	\$8.06	\$0.00	\$61.96

Effective Date - 03/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$22.56	\$9.90	\$0.00	\$0.00	\$32.46
2	50	\$28.20	\$9.90	\$0.00	\$0.00	\$38.10
3	60	\$33.84	\$9.90	\$0.00	\$0.00	\$43.74
4	70	\$39.48	\$9.90	\$8.06	\$0.00	\$57.44
5	80	\$45.12	\$9.90	\$8.06	\$0.00	\$63.08

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.) <i>PLUMBERS LOCAL 4</i>	09/01/2024	\$55.00	\$9.90	\$17.77	\$0.00	\$82.67
	03/01/2025	\$56.40	\$9.90	\$17.77	\$0.00	\$84.07
	09/01/2025	\$57.80	\$9.90	\$17.77	\$0.00	\$85.47
	03/01/2026	\$59.20	\$9.90	\$17.77	\$0.00	\$86.87

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

PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.61	\$9.65	\$17.70	\$0.00	\$67.96
	06/01/2025	\$42.00	\$9.65	\$17.70	\$0.00	\$69.35
	12/01/2025	\$43.38	\$9.65	\$17.70	\$0.00	\$70.73
	06/01/2026	\$44.82	\$9.65	\$17.70	\$0.00	\$72.17
	12/01/2026	\$46.26	\$9.65	\$17.70	\$0.00	\$73.61
	06/01/2027	\$47.71	\$9.65	\$17.70	\$0.00	\$75.06
	12/01/2027	\$49.16	\$9.65	\$17.70	\$0.00	\$76.51
	06/01/2028	\$50.66	\$9.65	\$17.70	\$0.00	\$78.01
	12/01/2028	\$52.16	\$9.65	\$17.70	\$0.00	\$79.51

For apprentice rates see "Apprentice- LABORER"

PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.86	\$9.65	\$17.70	\$0.00	\$68.21
	06/01/2025	\$42.25	\$9.65	\$17.70	\$0.00	\$69.60
	12/01/2025	\$43.63	\$9.65	\$17.70	\$0.00	\$70.98
	06/01/2026	\$45.07	\$9.65	\$17.70	\$0.00	\$72.42
	12/01/2026	\$46.51	\$9.65	\$17.70	\$0.00	\$73.86
	06/01/2027	\$47.96	\$9.65	\$17.70	\$0.00	\$75.31
	12/01/2027	\$49.41	\$9.65	\$17.70	\$0.00	\$76.76
	06/01/2028	\$50.91	\$9.65	\$17.70	\$0.00	\$78.26
	12/01/2028	\$52.41	\$9.65	\$17.70	\$0.00	\$79.76
For apprentice rates see "Apprentice- LABORER"						
POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$40.86	\$9.40	\$17.55	\$0.00	\$67.81
	06/01/2025	\$42.25	\$9.40	\$17.55	\$0.00	\$69.20
	12/01/2025	\$43.63	\$9.40	\$17.55	\$0.00	\$70.58
	06/01/2026	\$45.07	\$9.40	\$17.55	\$0.00	\$72.02
	12/01/2026	\$46.51	\$9.40	\$17.55	\$0.00	\$73.46
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33
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>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						

ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

ROOFER (Inc.Roofing Waterproofing &Roofing Damproofg) <i>ROOFERS LOCAL 33</i>	08/01/2024	\$51.03	\$13.03	\$21.70	\$0.00	\$85.76
	02/01/2025	\$52.28	\$13.03	\$21.70	\$0.00	\$87.01
	08/01/2025	\$53.78	\$13.03	\$21.70	\$0.00	\$88.51
	02/01/2026	\$55.03	\$13.03	\$21.70	\$0.00	\$89.76

Apprentice - ROOFER - Local 33

Effective Date - 08/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.52	\$13.03	\$6.52	\$0.00	\$45.07
2	60	\$30.62	\$13.03	\$21.70	\$0.00	\$65.35
3	65	\$33.17	\$13.03	\$21.70	\$0.00	\$67.90
4	75	\$38.27	\$13.03	\$21.70	\$0.00	\$73.00
5	85	\$43.38	\$13.03	\$21.70	\$0.00	\$78.11

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.14	\$13.03	\$6.52	\$0.00	\$45.69
2	60	\$31.37	\$13.03	\$21.70	\$0.00	\$66.10
3	65	\$33.98	\$13.03	\$21.70	\$0.00	\$68.71
4	75	\$39.21	\$13.03	\$21.70	\$0.00	\$73.94
5	85	\$44.44	\$13.03	\$21.70	\$0.00	\$79.17

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

Apprentice to Journeyworker Ratio:**

ROOFER SLATE / TILE / PRECAST CONCRETE <i>ROOFERS LOCAL 33</i>	08/01/2024	\$51.28	\$13.03	\$21.70	\$0.00	\$86.01
	02/01/2025	\$52.53	\$13.03	\$21.70	\$0.00	\$87.26
	08/01/2025	\$54.03	\$13.03	\$21.70	\$0.00	\$88.76
	02/01/2026	\$55.28	\$13.03	\$21.70	\$0.00	\$90.01

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- ROOFER"						
SHEETMETAL WORKER	07/01/2024	\$40.98	\$12.20	\$18.74	\$2.13	\$74.05
SHEETMETAL WORKERS LOCAL 63	01/01/2025	\$42.23	\$12.20	\$18.74	\$2.13	\$75.30

Apprentice - SHEET METAL WORKER - Local 63

Effective Date - 07/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$18.44	\$5.49	\$4.86	\$0.85	\$29.64
2	50	\$20.49	\$6.10	\$5.40	\$0.94	\$32.93
3	55	\$22.54	\$6.71	\$9.71	\$1.15	\$40.11
4	60	\$24.59	\$7.32	\$9.71	\$1.23	\$42.85
5	65	\$26.64	\$7.93	\$9.71	\$1.31	\$45.59
6	70	\$28.69	\$8.54	\$9.71	\$1.39	\$48.33
7	75	\$30.74	\$9.15	\$9.71	\$1.47	\$51.07
8	80	\$32.78	\$9.76	\$17.66	\$1.78	\$61.98
9	85	\$34.83	\$10.37	\$17.66	\$1.86	\$64.72
10	90	\$36.88	\$10.98	\$17.66	\$1.94	\$67.46

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$19.00	\$5.49	\$4.86	\$0.85	\$30.20
2	50	\$21.12	\$6.10	\$5.40	\$0.94	\$33.56
3	55	\$23.23	\$6.71	\$9.71	\$1.15	\$40.80
4	60	\$25.34	\$7.32	\$9.71	\$1.23	\$43.60
5	65	\$27.45	\$7.93	\$9.71	\$1.31	\$46.40
6	70	\$29.56	\$8.54	\$9.71	\$1.39	\$49.20
7	75	\$31.67	\$9.15	\$9.71	\$1.47	\$52.00
8	80	\$33.78	\$9.76	\$17.66	\$1.78	\$62.98
9	85	\$35.90	\$10.37	\$17.66	\$1.86	\$65.79
10	90	\$38.01	\$10.98	\$17.66	\$1.94	\$68.59

Notes:

Apprentice to Journeyworker Ratio:1:3

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	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>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TERRAZZO FINISHERS BRICKLAYERS LOCAL 3 - MARBLE & TILE	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 - 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

Effective Date - 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.37	\$11.49	\$23.59	\$0.00	\$67.45
2	60	\$38.84	\$11.49	\$23.59	\$0.00	\$73.92
3	70	\$45.32	\$11.49	\$23.59	\$0.00	\$80.40
4	80	\$51.79	\$11.49	\$23.59	\$0.00	\$86.87
5	90	\$58.27	\$11.49	\$23.59	\$0.00	\$93.35

Notes:

Apprentice to Journeyworker Ratio:1:3

TEST BORING DRILLER LABORERS - FOUNDATION AND MARINE	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 LABORERS - FOUNDATION AND MARINE	12/01/2024	\$47.07	\$9.65	\$18.22	\$0.00	\$74.94
	06/01/2025	\$48.57	\$9.65	\$18.22	\$0.00	\$76.44
	12/01/2025	\$50.07	\$9.65	\$18.22	\$0.00	\$77.94
	06/01/2026	\$51.62	\$9.65	\$18.22	\$0.00	\$79.49
	12/01/2026	\$53.12	\$9.65	\$18.22	\$0.00	\$80.99

For apprentice rates see "Apprentice- LABORER"

TEST BORING LABORER LABORERS - FOUNDATION AND MARINE	12/01/2024	\$46.95	\$9.65	\$18.22	\$0.00	\$74.82
	06/01/2025	\$48.45	\$9.65	\$18.22	\$0.00	\$76.32
	12/01/2025	\$49.95	\$9.65	\$18.22	\$0.00	\$77.82
	06/01/2026	\$51.50	\$9.65	\$18.22	\$0.00	\$79.37
	12/01/2026	\$53.00	\$9.65	\$18.22	\$0.00	\$80.87

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	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>	12/01/2024	\$59.18	\$9.65	\$19.00	\$0.00	\$87.83
	06/01/2025	\$60.68	\$9.65	\$19.00	\$0.00	\$89.33
	12/01/2025	\$62.18	\$9.65	\$19.00	\$0.00	\$90.83
	06/01/2026	\$63.73	\$9.65	\$19.00	\$0.00	\$92.38
	12/01/2026	\$65.23	\$9.65	\$19.00	\$0.00	\$93.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2024	\$61.18	\$9.65	\$19.00	\$0.00	\$89.83
	06/01/2025	\$62.68	\$9.65	\$19.00	\$0.00	\$91.33
	12/01/2025	\$64.18	\$9.65	\$19.00	\$0.00	\$92.83
	06/01/2026	\$65.73	\$9.65	\$19.00	\$0.00	\$94.38
	12/01/2026	\$67.23	\$9.65	\$19.00	\$0.00	\$95.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2024	\$51.25	\$9.65	\$19.00	\$0.00	\$79.90
	06/01/2025	\$52.75	\$9.65	\$19.00	\$0.00	\$81.40
	12/01/2025	\$54.25	\$9.65	\$19.00	\$0.00	\$82.90
	06/01/2026	\$55.80	\$9.65	\$19.00	\$0.00	\$84.45
	12/01/2026	\$57.30	\$9.65	\$19.00	\$0.00	\$85.95
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2024	\$53.25	\$9.65	\$19.00	\$0.00	\$81.90
	06/01/2025	\$54.75	\$9.65	\$19.00	\$0.00	\$83.40
	12/01/2025	\$56.25	\$9.65	\$19.00	\$0.00	\$84.90
	06/01/2026	\$57.80	\$9.65	\$19.00	\$0.00	\$86.45
	12/01/2026	\$59.30	\$9.65	\$19.00	\$0.00	\$87.95
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2024	\$40.24	\$15.07	\$20.17	\$0.00	\$75.48
	01/01/2025	\$40.24	\$15.57	\$20.17	\$0.00	\$75.98
	06/01/2025	\$41.24	\$15.57	\$20.17	\$0.00	\$76.98
	12/01/2025	\$41.24	\$15.57	\$21.78	\$0.00	\$78.59
	01/01/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$79.19
	06/01/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$80.19
	12/01/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$81.93
	01/01/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$82.53

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
VOICE-DATA-VIDEO TECHNICIAN <i>ELECTRICIANS LOCAL 96</i>	09/01/2024	\$35.29	\$13.99	\$17.57	\$0.00	\$66.85
	09/07/2025	\$36.12	\$14.98	\$17.91	\$0.00	\$69.01
	09/06/2026	\$37.04	\$15.96	\$18.27	\$0.00	\$71.27

Apprentice - VOICE-DATA-VIDEO TECHNICIAN - Local 96

Effective Date - 09/01/2024

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

Effective Date - 09/07/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.06	\$14.98	\$4.51	\$0.00	\$37.55
2	55	\$19.87	\$14.98	\$4.57	\$0.00	\$39.42
3	60	\$21.67	\$14.98	\$17.48	\$0.00	\$54.13
4	65	\$23.48	\$14.98	\$17.53	\$0.00	\$55.99
5	70	\$25.28	\$14.98	\$17.59	\$0.00	\$57.85
6	75	\$27.09	\$14.98	\$17.64	\$0.00	\$59.71
7	80	\$28.90	\$14.98	\$17.70	\$0.00	\$61.58
8	85	\$30.70	\$14.98	\$17.75	\$0.00	\$63.43

Notes:

Apprentice to Journeyworker Ratio:1:1

WAGON DRILL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.61	\$9.65	\$17.70	\$0.00	\$67.96
	06/01/2025	\$42.00	\$9.65	\$17.70	\$0.00	\$69.35
	12/01/2025	\$43.38	\$9.65	\$17.70	\$0.00	\$70.73
	06/01/2026	\$44.82	\$9.65	\$17.70	\$0.00	\$72.17
	12/01/2026	\$46.26	\$9.65	\$17.70	\$0.00	\$73.61
	06/01/2027	\$47.71	\$9.65	\$17.70	\$0.00	\$75.06
	12/01/2027	\$49.16	\$9.65	\$17.70	\$0.00	\$76.51
	06/01/2028	\$50.66	\$9.65	\$17.70	\$0.00	\$78.01
	12/01/2028	\$52.16	\$9.65	\$17.70	\$0.00	\$79.51

For apprentice rates see "Apprentice- LABORER"

WAGON DRILL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS LOCAL 4</i>	09/01/2024	\$55.00	\$9.90	\$17.77	\$0.00	\$82.67
	03/01/2025	\$56.40	\$9.90	\$17.77	\$0.00	\$84.07
	09/01/2025	\$57.80	\$9.90	\$17.77	\$0.00	\$85.47
	03/01/2026	\$59.20	\$9.90	\$17.77	\$0.00	\$86.87
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						
Outside Electrical - East						
CABLE TECHNICIAN (Power Zone) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$29.67	\$9.25	\$1.89	\$0.00	\$40.81
For apprentice rates see "Apprentice- LINEMAN"						
CABLEMAN (Underground Ducts & Cables) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$42.03	\$9.25	\$10.27	\$0.00	\$61.55
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN CDL <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$34.62	\$9.25	\$10.07	\$0.00	\$53.94
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$27.20	\$9.25	\$1.82	\$0.00	\$38.27
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class A CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$42.03	\$9.25	\$14.35	\$0.00	\$65.63
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class B CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$37.09	\$9.25	\$10.87	\$0.00	\$57.21
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$27.20	\$9.25	\$1.82	\$0.00	\$38.27
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN -Inexperienced (<2000 Hrs.) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$22.25	\$9.25	\$1.82	\$0.00	\$33.32
For apprentice rates see "Apprentice- LINEMAN"						
JOURNEYMAN LINEMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$49.45	\$9.25	\$17.48	\$0.00	\$76.18

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - LINEMAN (Outside Electrical) - East Local 104

Effective Date - 08/30/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$29.67	\$9.25	\$3.39	\$0.00	\$42.31
2	65	\$32.14	\$9.25	\$3.46	\$0.00	\$44.85
3	70	\$34.62	\$9.25	\$3.54	\$0.00	\$47.41
4	75	\$37.09	\$9.25	\$5.11	\$0.00	\$51.45
5	80	\$39.56	\$9.25	\$5.19	\$0.00	\$54.00
6	85	\$42.03	\$9.25	\$5.26	\$0.00	\$56.54
7	90	\$44.51	\$9.25	\$7.34	\$0.00	\$61.10

Notes:

Apprentice to Journeyworker Ratio:1:2

TELEDATA CABLE SPLICER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/04/2019	\$30.73	\$4.70	\$3.17	\$0.00	\$38.60
TELEDATA LINEMAN/EQUIPMENT OPERATOR <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/04/2019	\$28.93	\$4.70	\$3.14	\$0.00	\$36.77
TELEDATA WIREMAN/INSTALLER/TECHNICIAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/04/2019	\$28.93	\$4.70	\$3.14	\$0.00	\$36.77

Additional Apprentice Information:

All apprentices must be registered with the Division of Apprenticeship Training (DAS) in accordance with M.G.L. c. 23, §§ 11E-11L. Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the hourly prevailing wage rate established by the Commissioner under the provisions of M.G.L. c. 149, §§ 26-27D. Apprentice ratios are established by DAS pursuant to M.G.L. c. 23, §§ 11E-11L. Ratios are expressed as the allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified. The ratios listed herein have been taken from relevant private collective bargaining agreements (CBAs) and are provided for illustrative purposes only. They have not been independently verified as being accurate or continuing to be accurate. Parties having questions regarding what ratio to use should contact DAS.

WEEKLY STATEMENT OF COMPLIANCE

In accordance with Massachusetts General Law c. 149, §27B, a true and accurate record must be kept of all persons employed on the public works project for which the enclosed rates have been provided. A Payroll Form is available from the Department of Labor Standards (DLS) at mass.gov/dols/pw and includes all the information required to be kept by law. Every contractor or subcontractor is required to keep these records and preserve them for a period of three years from the date of completion of the contract.

On a weekly basis, every contractor and subcontractor is required to submit a certified copy of their weekly payroll records to the awarding authority; this includes the payroll forms and the Statement of Compliance form. The certified payroll records must be submitted either by regular mail or by e-mail to the awarding authority. Once collected, the awarding authority is required to preserve those records for three years from the date of completion of the project.

Each such contractor and subcontractor shall furnish weekly **and** within 15 days after completion of its portion of the work, to the awarding authority directly by first-class mail or email, a statement, executed by the contractor, subcontractor or by any authorized officer thereof who supervised the payment of wages, this form, accompanied by their payroll:

WEEKLY STATEMENT OF COMPLIANCE

_____, 20____

I, _____, _____
(Name of signatory party) (Title)

do hereby state:

That I pay or supervise the payment of the persons employed by

_____ on the _____
(Contractor, subcontractor or public body) (Building or project)

and that all mechanics and apprentices, teamsters, chauffeurs and laborers employed on said project have been paid in accordance with wages determined under the provisions of sections twenty-six and twenty-seven of chapter one hundred and forty nine of the General Laws.

Signature _____

Title _____

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																	
(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)	Project Gross Wages Total Gross Wages	Check No. (H)		
							Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.										

APPRENTICESHIP DOCUMENTATION: Please answer the questions below.

(1) Are any apprentice employees identified above? YES NO

(2) If yes, are all apprentice employees identified above currently registered with the MA DLS Division of Apprentice Standards? YES NO

(3) If yes, is a copy of the apprentice ID card issued by the MA DLS Division of Apprentice Standards included for all apprentice employees identified above? YES NO

**BID FORM
LEOMINSTER, MASSACHUSETTS
TWIN CITIES RAIL TRAIL AT LEOMINSTER DEPOT**

ITEM NO.	Approx. Quantity	Item with Unit Bid Price Written in Words	Unit Price		Amount	
			Dollars	Cents	Dollars	Cents
01 53 00.01	5	Silt Sack Dust Control, at Per EACH				
01 53 00.02	4	Bound Removed and Reset, at Per Each				
01 53 00.03	1	Mobilization, at Per Lump Sum				
01 53 00.04	1	NPDES Stormwater Pollution Prevention Plan at Per Lump Sum				
01 53 00.05	330	Sediment Control Barrier, at Per Foot				
01 56 39.01	950	Tree Protection Fencing, at Per Foot				
01 56 39.02	2	Pruning of Existing Trees to Remain, at Per Each				
03 30 00.01	620	Pedestrian Concrete Paving, at Per Square Yard				
03 30 00.02	50	Cement Concrete Pedestrian Curb Ramp, at Per Square Yard				
31 00 00.01	1,300	Unclassified Excavation, at Per Cubic Yard				
31 00 00.02	50	Test Pit for Exploration, at Per Cubic Yard				
31 00 00.03	500	Ordinary Borrow, at Per Cubic Yard				
31 00 00.04	800	Gravel Borrow, at Per Cubic Yard				
31 00 00.05	2	Crushed Stone, at Per Ton				
31 00 00.06	3,000	Fine Grading and Compaction - Subgrade Area, at Per Square Yard				

31 00 00.07	1	Environmental Health and Safety Program, at Per Lump Sum				
31 00 00.08	40	Personal Protection Level C Upgrade, at Per Hour				
31 00 00.09	40	Licensed Site Professional Services, at Per Hour				
31 00 00.10	1,270	Disposal of Unregulated Soil, at Per Ton				
31 00 00.11	80	Disposal of Regulated Soil - In-State Facility, at Per Ton				
31 00 00.12	80	Disposal of Regulated Soil - Out-of-State Facility, at Per Ton				
31 00 00.13	80	Disposal of Hazardous Waste, at Per Ton				
31 00 00.14	10	Geotextile Fabric for Separation, at Per Square Yard				
31 00 00.15	100	Track Excavation, at Per Foot				
31 00 00.16	10	Disposal of Treated Wood Products, at Per Ton				
32 05 05.01	0.5	Clearing and Grubbing, at Per Acre				
32 05 05.02	0.3	Selective Clearing and Thinning, at Per Acre				
32 05 05.03	20	Sawcutting Asphalt Pavement, at Per Foot				
32 05 05.04	60	Sawcutting Portland Cement Concrete, at Per Foot				
32 10 00.01	13,460	Calcium Chloride for Roadway Dust Control, at Per Pound				

32 10 00.02	10	Water for Roadway Dust Control, at Per 1,000 Gallons				
32 10 00.03	210	Superpave Surface Course - 9.5 (SSC - 9.5), at Per Ton				
32 10 00.04	340	Superpave Intermediate Course - 19.0 (SIC - 19.0), at Per Ton				
32 10 00.05	20	HMA for Patching, at Per Ton				
32 10 00.06	200	Asphalt Emulsion for Tack Coat, at Per Gallon				
32 1000.07	120	HMA Joint Adhesive, at Per Foot				
32 10 00.08	20	Temporary Asphalt Patching, at Per Ton				
32 10 00.09	4	Hotmix Asphalt Sidewalk or Driveway, at Per Ton				
32 10 00.10	230	Imprint System - Median, at Per Square Foot				
32 10 00.11	24	Brick Walk Removed and Relaid, at Per Square Yard				
32 12 10.01	40	Control of Invasive Plants Existing on Site, at Per Hour				
32 12 20.01	8	Invasive Plant Management Strategy, at Per Hour				
32 16 00.01	150	Granite Curb Type VB - Straight, at Per Foot				
32 16 00.02	170	Granite Curb Type VB - Curved, at Per Foot				

32 16 00.03	36	Granite Transition Curb for Pedestrian Curb Ramps - Straight, at Per Foot				
32 16 00.04	20	Granite Transition Curb for Pedestrian Curb Ramps - Curved, at Per Foot				
32 16 00.05	180	Curb Removed and Reset, at Per Foot				
32 16 00.06	260	Curb Removed and Discarded, at Per Foot				
32 17 00.01	90	Warning-Regulatory and Route Marker - Aluminum Panel (Type A), at Per Square Foot				
32 17 00.02	20	Sign Sup (N/Guide)+RTE MKR W/1 Brkway Post Assembly - Steel, at Per Each				
32 17 00.03	510	Safety Signing for Traffic Management, at Per Square Foot				
32 17 00.04	110	Temporary Pedestrian Barricade, at Per Foot				
32 17 00.05	10	Temporary Pedestrian Curb Ramp, at Per Each				
32 17 00.06	4	Portable Breakaway Barricade Type III, at Per Each				
32 17 00.07	100	Pavement Marking Removal, at Per Square Foot				
32 17 00.08	50	Arrow Board, at Per Day				
32 17 00.09	1,900	Reflectorized Drum, at Per Day				
32 17 00.1	20	12 Inch Reflectorized White Line (Painted), at Per Foot				

32 17 00.11	390	4 Inch Reflectorized Yellow Line (Painted), at Per Foot				
32 17 00.12	40	Pavement Legend Reflectorized White (Painted), at Per Square Foot				
32 17 00.13	40	Pavement Arrows and Legends Reflectorized White (Thermoplastic), at Per Square Foot				
32 17 00.14	30	Pavement Arrows and Legends Reflectorized Blue (Thermoplastic), at Per Square Foot				
32 17 00.15	560	6 Inch Reflectorized White Line (Thermoplastic), at Per Foot				
32 17 00.16	630	12 Inch Reflectorized White Line (Thermoplastic), at Per Foot				
32 17 00.17	1	Miscellaneous Sign Removed and Reset, at Per Each				
32 30 00.01	81	Granite Seat Walls, at Per Foot				
32 30 00.02	3	Granite Marker, at Per Each				
32 30 00.03	498	Granite Paving, at Per Square Foot				
32 30 00.04	2	Interpretive Sign, at Per Each				
32 30 00.05	1	Trailhead Sign, at Per Each				
32 33 00.06	260	Split Rail Fence, at Per Foot				
32 33 00.07	400	Wood Guardrail, at Per Foot				
32 33 00.01	2	Trash Receptacle, at Per Each				

32 33 00.02	2	Curved Park Bench, at Per Each				
32 33 00.03	4	Curved Park Bench on Wall, at Per Each				
32 33 00.04	2	Picnic Table with Seats, at Per Each				
32 33 00.05	1	Accessible Picnic Table with Seats, at Per Each				
32 33 00.06	5	Bicycle Rack, at Per Each				
32 90 00.01	560	Planting Soil, at Per Cubic Yard				
32 90 00.02	3,623	Seeded Lawn, at Per Square Yard				
32 90 00.03	5	Amelanchier canadensis 6'-8' Height, at Per Each				
32 90 00.04	3	Crataegus viridis 'Winter King' 2.5"-3" Cal., at Per Each				
32 90 00.05	3	Juniperus virginiana 5'-6' Height, at Per Each				
32 90 00.06	3	Liquidambar styraciflua 'Rotundiloba' 3.5"-4" Cal., at Per Each				
32 90 00.07	1	Nyssa sylvatica 3.5"-4" Cal., at Per Each				
32 90 00.08	32	Cornus sericea 7 Gal., at Per Each				
32 90 00.09	18	Ilex glabra 'Shamrock' 7 Gal., at Per Each				
32 90 00.10	8	Viburnum trilobum 7 Gal., at Per Each				
32 90 00.11	85	Hemerocallis 'Joan Senior' 1 Gal., at Per Each				

32 90 00.12	130	Hemerocallis 'Rosy Returns' 1 Gal., at Per Each				
32 90 00.13	90	Symphoricaricium novae-angliae 1 Gal., at Per Each				
32 90 00.14	71	Rudbeckia fulgida 'Goldsturm' 1 Gal., at Per Each				
33 40 00.01	1	Drainage Structure Remodeled, at Per Each				
TOTAL BID PRICE*:						
<i>TOTAL BID PRICE (DOLLARS)</i>			<i>TOTAL BID PRICE (CENTS)</i>			

*** Total Bid Price must be filled in on page 300-2**