

**CITY OF NEWTON
PURCHASING DEPARTMENT**

***CONTRACT FOR PUBLIC WORKS DEPARTMENT
(M.G.L. Ch. 30, §39M)***

***PROJECT MANUAL:*
**NEWTON FREE LIBRARY PARKING LOT IMPROVEMENTS
*INVITATION FOR BID #22-46*****

**Pre-Bid Meeting: February 17, 2022 at 10:00AM
Bid Opening Date: February 24, 2022 at 12:30PM**

February 2022

Ruthanne Fuller, Mayor

CITY OF NEWTON, MASSACHUSETTS

PURCHASING DEPARTMENT

INVITATION FOR BID #22-46

The City of Newton invites sealed bids in accordance with M.G.L. c.30, §39M from Contractors for:

NEWTON FREE LIBRARY PARKING LOT IMPROVEMENTS

Pre-Bid Meeting at: 10:00AM, Thursday, February 17, 2022, Newton Free Library Parking Lot,¹ Newton (Not Mandatory)

Bids will be received until: 12:30PM, Thursday, February 24, 2022*
at the Purchasing Department, Room 108, Newton City Hall, 1000 Commonwealth Avenue, Newton, MA 02459. Bids will not be accepted nor may submitted bids be corrected, modified or withdrawn after the deadline for bids. Immediately following the deadline for bids, all bids received within the time specified will be publicly opened and read aloud*

The work under this contract consists of furnishing all necessary labor, materials, equipment required full-depth pavement reclamation with SUPERPAVE pavement, full-depth porous pavement construction, grading and installation of new drainage work, landscaping, parking lot lighting and installation of signage and pavement markings. The proposed work also includes ADA-compliant sidewalks, walkways, and pedestrian curb ramps, removing and resetting existing granite curb, installation of new granite curb, and all other work as shown on the plans, as described in the Contract Documents (unless specifically indicated as not to be done), and as directed by the City Engineer. The work shall be performed at the Free Library Parking Lot, 33 Homer Street, City of Newton.

* To promote the health and safety of City workers and the public, Newton City Hall is still observing COVID restrictions. The City has adopted the following procedures that may affect your participation in this bid:

1. Bidders who wish to attend the Bid Opening can do so by telephone conference call. To attend, call 617.454.5555. When prompted, enter Participant Passcode 1220#. There will be no in person meetings.
2. Bids not sent by mail or courier can be dropped off in Room 108 or in a locked drop box at the top of the stairs to left of the main door to City Hall. The box will be checked at the scheduled submission deadline.
3. Bids results will be scanned and posted as soon as practicable after the opening. Copies of bids will be available upon written request.

Documents relating to this Invitation for Bids (Contract Documents) will be available online at www.newtonma.gov/bids or for pick up at the Purchasing Department after 10:00AM, February 10, 2022. Bids must be submitted with one Original and two Copies.

Only contractors that have been prequalified by the Massachusetts Department of Transportation (MassDOT) are eligible to bid on this contract. MassDOT will provide a list of Prequalified Construction Contractors to the City of Newton. Bidders will be verified at the time of Bid Opening.

A bid deposit in an amount that is not less than five percent (5%) of the value of the bid is required. Bid deposits, payable to the City of Newton, shall be in the form of a bid bond, cash, a certified check or a treasurer's or cashier's check issued by a responsible bank or trust company.

¹ The Free Library Parking Lot is located in Homer Street across from the Newton City Hall.

Bidders are reminded that the bid deposit covers the City for damages when a bidder withdraws its bid after the bid submission date. **Be advised that to the extent permitted by law, the City will retain all bid deposits for withdrawn bids.**

The costs of any bond and any insurance required in this Invitation for Bid are the responsibility of the bidder; such costs will not be reimbursed by the City and should be included in your bid.

The City of Newton will award the contract to the lowest eligible and responsible bidder. Please Note: this bid, in accordance with the Chapter 303 Acts of 2008, contains Price Adjustments and new Prevailing Wage requirements. All bidders are required to familiarize themselves with these terms and conditions before submitting a bid.

The start date is the date on which the Notice to Proceed is issued, which is anticipated to be April 1, 2022. All work must be completed prior to December 31, 2022.

All bids are subject to the provisions of M.G.L. c.30, §39M. **Wages are subject** to the minimum wage rates determined by the Massachusetts Department of Labor and Industries pursuant to M.G.L. c.149, §26 to 27H. The schedule of wage rates applicable to this contract is included in the bidding documents. In addition, the prevailing wage schedule will be updated annually for all public construction projects lasting longer than one (1) year.

You will be required to pay the rates set out in any updated prevailing wage schedule. Increases in prevailing wage schedules will not be the basis for change order requests. The successful bidder will be required to provide a Certificate of Insurance demonstrating current coverage of the type and amounts set forth in the Project Manual. The successful bidder will be required to furnish a **Labor and Materials Payment Bond** in the amount of **50%** of the contract total. Wages are paid to drivers for all **“on-site”** work.

Once you have downloaded this bid from the internet website (www.newtonma.gov/bids), I strongly suggest you email your company’s name, address, EMAIL, phone, fax, the INVITATION FOR BID NUMBER, and Project Title to purchasing@newtonma.gov so that we may add you to the Bidders List and you will be notified of any/all addenda.

The City will reject any and all bids in accordance with the above-referenced General Laws. In addition, the City reserves the right to waive minor informalities in any or all bids or to reject any or all bids (in whole or in part) if it be in the public interest to do so.

In the event that any person wishes to attend a bid opening or pre-bid meeting, accessible and reasonable accommodations will be provided to persons requiring assistance. If you need a reasonable accommodation, please contact the city of Newton’s ADA Coordinator, Jini Fairley, at least two business days in advance of the meeting: jfairley@newtonma.gov or (617) 796-1253. For Telecommunications Relay Service, please dial 711.

CITY OF NEWTON



Nicholas Read
Chief Procurement Officer
February 10, 2022

CITY OF NEWTON
DEPARTMENT OF PURCHASING
INSTRUCTIONS TO BIDDERS

ARTICLE 1 - BIDDER'S REPRESENTATION

- 1.1 Each General Bidder (hereinafter called the "Bidder") by making a bid (hereinafter called "bid") represents that:
1. The Bidder has read and understands the Bidding Documents, Contract Forms, General Conditions, Conditions of the Contract, General Requirements and Project Specifications (collectively referred to as the "Contract Documents") and the bid is made in accordance therewith.
 2. The Bidder has visited the work site (*See Construction Plans, attached*) and is familiar with the local conditions under which the work has to be performed.
- 1.2 Failure to so examine the Contract Documents or visit the work site will not relieve any Bidder from any obligation under the bid as submitted.

ARTICLE 2 - REQUEST FOR INTERPRETATION

- 2.1 Bidders shall promptly notify the City of any ambiguity, inconsistency, or error which they may discover upon examination of the Contract Documents, the site, and local conditions.
- 2.2 Bidders requiring clarification or interpretation of the Contract Documents shall make a written request to the *Chief Procurement Officer* at purchasing@newtonma.gov or via facsimile (617) 796-1227. The City will answer such requests if received by **Friday, February 18, 2022 at 12:00 noon**.
- 2.3 Interpretations, corrections, or changes to the Contract Documents will be made by Addenda, which will become part of the Contract Documents. The City will not be held accountable for any oral instruction.
- 2.4 Addenda will be emailed to every individual or firm on record as having taken a set of Contract Documents.
- 2.5 Copies of addenda will be made available for inspection at the location listed in the Invitation for Bids where Contract Documents are on file, in addition to being available online at www.newtonma.gov/bids.
- 2.6 Bidders or proposers contacting ANY CITY EMPLOYEE regarding an Invitation for Bid (IFB) or a Request for Proposal (RFP), outside of the Purchasing Department, once an IFB or RFP has been released may be disqualified from the bidding process.
- 2.7 Bidders downloading information off the internet web site are solely responsible for obtaining any addenda prior to the bid opening. If the bidder makes themselves known to the Purchasing Department, at purchasing@newtonma.gov or via facsimile (617) 796-1227, they shall be placed on the bidder's list. Bidders must provide the Purchasing Department with their company's name, street address, city, state, zip, phone, fax, email address and **INVITATION FOR BID #22-46**.

ARTICLE 3 - MBE PARTICIPATION

- 3.1 Notice is hereby given that the Mayor's Affirmative Action Plan for the City of Newton in effect at the time of this solicitation is applicable to all construction contracts in excess of \$10,000.00.

- 3.2 Notice is hereby given that the City of Newton Minority/Women Business Enterprise Plan and the Supplemental Equal Employment Opportunity Anti-Discrimination and Affirmative Action Program in effect at the time of this solicitation are applicable to all City contracts for goods and services in excess of \$50,000.00.
- 3.3 Copies of the Plans and Program referred to in Sections 3.1 and 3.2 are available at www.newtonma.gov/purchasing.

ARTICLE 4 - PREPARATION AND SUBMISSION OF BIDS

- 4.1 Bids shall be submitted on "Bid Form #22-46," attached.
- 4.2 All entries on the Bid Form shall be made by typewriter or in ink.
- 4.3 Where so indicated on the Bid Form, sums shall be expressed in both words and figures. Where there is a discrepancy between the bid sum expressed in words and the bid sum expressed in figures, the words shall control.
- 4.4 Bid Deposits shall be submitted in the amount specified in the Invitation for Bids. They shall be made payable to the City and shall be either in the form of cash, certified check, treasurer's or cashier's check issued by a responsible bank or trust company, or a bid bond issued by a surety licensed to do business in the Commonwealth of Massachusetts; and shall be conditioned upon the faithful performance by the principal of the agreements contained in the bid. Bidders are reminded that the bid deposit covers the City for damages when a bidder withdraws its bid after the bid submission date. **Bid advised that to the extent permitted by law the City will retain all bid deposits for withdrawn bids.**

Bid deposits of the three (3) lowest responsible and eligible Bidders shall be retained until the execution and delivery of the City/Contractor agreement.

- 4.5 The Bid, including the bid deposit, shall be enclosed in a sealed envelope with the following plainly marked on the outside:

- * GENERAL BID FOR: **#22-46**
- * NAME OF PROJECT: **NEWTON FREE LIBRARY PARKING LOT IMPROVEMENTS**
- * BIDDER'S NAME, BUSINESS ADDRESS, AND PHONE NUMBER

- 4.6 Date and time for receipt of bids is set forth in the Invitation for Bids (IFB).
- 4.7 Timely delivery of a bid at the location designated shall be the full responsibility of the Bidder. In the event that Newton City Hall is closed on the date or at the time that bids are due, the date and time for receipt of bids shall be on the next business day following that the Newton City Hall and the Purchasing Department are open.
- 4.8 Massachusetts law requires all employees who work on Massachusetts public works construction sites must have no less than 10 hours of OSHA-approved safety and health training. See M.G.L. c.30, §39M(c), M.G.L. c.30, §39S(a)(1), M.G.L. c.149, §44E(2) & M.G.L. c.149, §44F(2).
 1. This requirement will apply to any general bid or sub bid submitted.
 2. This law directs the Massachusetts Attorney General to restrain the award of construction contracts to any contractor who is in violation of this requirement and to restrain the performance of these contracts by non-complying contractors.
 3. The contractor and all subcontractors on this project must certify on the Bid Form compliance with the applicable requirement. Non-compliance with this law will disqualify the bidder.

4.9 Price Adjustment Clauses Chapter 90 Funds

It is the intention of the City to include price adjustments in the award of this Contract. These price adjustments shall be for (1) **Fuel**, (2) **Liquid Asphalt** and (3) **Portland Cement** when such commodities have been determined to be integral components of the work.

For those commodities designated to be paid as a 'differential' item, the special provision shall provide for a price adjustment formula for the affected items. This adjustment shall be based on the difference between the **Base Price** and the **Period Price**, which shall be evaluated on a **monthly** basis, but price adjustments shall only be made if the monthly cost change exceeds +/- **5 percent**. Subsequently, each respective price adjustment shall be made as specified under each applicable and separate payment item.

IMPORTANT NOTE: Depending on the prevailing market trends at the time of payment these price adjustments may provide for additional compensation to the Contractor, or they may otherwise result in a repayment to the City. The increase or a decrease in the value of the commodity, during the applicable payment period in which the goods and/or services were rendered, shall be the determinant factor.

The City will refer to the MassDOT price adjustment tables² to establish the base price and will be used for the actual period price.

Price Adjustment Clauses – *to apply as follows:*

- **Diesel and Gasoline (Items 0.303DFC-A (Fuel Costs For Asphalt) & 0.303DFC-EXB (Fuel Costs Excavation and Backfill))**

The Base Price and the Period Price of fuel shall be the derived average cost of Diesel Fuel and Gasoline Fuel combined for each applicable payment period. Fuel adjustments shall apply to all work in the contract. The Contractor, at its own election, may either choose to bid its fuel costs separately, or it may otherwise elect to incorporate its fuel costs into separate payment items. In any event, the Contractor's final bid prices shall include the fuel costs for all goods provided and services rendered under this contract. *See Item Sheets pp. 68-69 below.*

- **Liquid Asphalt (Item 0.303DLA-A)** – Price adjustments for Liquid Asphalt shall be made in accordance with Special Provision §0.303LA. *See Item Sheet p. 69 below.*

- **Portland Cement (Item 0.303DPC-C)** – Price adjustments for Portland Cement shall be made in accordance with Special Provision §0.303LA. *See Item Sheet p. 70 below.*

No price adjustment will be allowed beyond the completion date of the contract unless there is an approved extension of time by the City.

ARTICLE 5 - ALTERNATES

5.1 Each Bidder shall acknowledge Alternates (if any) in Section C on the Bid Form.

5.2 In the event that an Alternate does not involve a change in the amount of the base bid, the Bidder shall so indicate by writing "No Change", "N/C" or "0" in the space provided for that Alternate.

5.3 Bidders shall enter on the Bid Form a single amount for each Alternate, which shall consist of the amount for work performed by the Contractor.

² <https://www.mass.gov/service-details/massdot-current-contract-price-adjustments>

- 5.4 The low Bidder will be determined on the basis of the sum of the base bid and the accepted alternates.

ARTICLE 6 - WITHDRAWAL OF BIDS

- 6.1 Any bid may be withdrawn prior to the time designated for receipt of bids on written or electronic request. Electronic withdrawal of bids must be confirmed over the Bidder's signature by written notice postmarked on or before the date and time set for receipt of bids.
- 6.2 Withdrawn bids may be resubmitted up to the time designated for the receipt of bids.
- 6.3 No bids shall be withdrawn within thirty days, Saturdays, Sundays and legal holidays excluded, after the opening of the bids.

ARTICLE 7 - CONTRACT AWARD

- 7.1 The City is soliciting prices for all necessary labor, materials, and equipment required for the Free Library parking lot improvements based on the item costs set forth in the Item Sheets on pp. 67-84 below. It is the City's intent to award one (1) contract responsive and eligible bidder offering the lowest Total Bid Price on Bid Form #22-46. A contract will be awarded within sixty (60) days, Saturdays, Sundays, and legal holidays excluded, after the opening of bids.
- 7.2 The City of Newton reserves the right to waive minor informalities in or to reject any or all Bids if it be in the public interest to do so.
- 7.3 The City reserves the right to reject any bidder who has failed to pay any local taxes, fees, assessments, betterments, or any other municipal charge, unless the bidder has a pending abatement application or has entered into a payment agreement with the collector-treasurer.
- 7.4 As used herein, the term "lowest responsible and eligible Bidder" shall mean the Bidder (1) whose bid is the lowest of those bidders possessing the skill, ability and integrity necessary for the faithful performance of the work; (2) who has met all the requirements of the invitation for bids; (3) who shall certify that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; and (4) who, where the provisions of section eight B of chapter twenty-nine apply, shall have been determined to be qualified thereunder.
- 7.5 Subsequent to the award and within five (5) days, Saturday, Sundays and legal holidays excluded, after the prescribed forms are presented for signature, the successful Bidder shall execute and deliver to the City a Contract in the form included in the Contract Documents in such number of counterparts as the City may require.
- 7.6 In the event that the City receives low bids in identical amount from two or more responsive and responsible Bidders, the City shall select the successful Bidder by a blind selection process chosen by the City, such as flipping a coin or drawing names from a hat. The low Bidders who are under consideration will be invited to attend and observe the selection process.

ARTICLE 8 - TAXES

- 8.1 The Bidder shall not include in this bid any tax imposed upon the sale or rental of tangible personal property in this Commonwealth, such as any and all building materials, supplies, services and equipment required to complete the work.
- 8.2 The City is exempt from payment of the Massachusetts Sales Tax, and the Bidder shall not include any sales tax on its bid. The City's exemption number is E-046-001-404.

ARTICLE 9 – PROPRIETARY SPECIFICATIONS

- 9.1 The City has used a proprietary specification to describe the supply listed in the specifications. Such specifications are permitted under M.G.L. c. 30, §39M(b), provided that the City state in writing that use of the proprietary specification is in its best interest and that it will accept an “equal” of the item specified. An item is considered equal if (i) it is at least equal in quality, durability, appearance, strength, and design; (ii) will perform the intended function at least equally; and (iii) conforms substantially, even with deviations, to the detailed requirements contained in the specifications. Bidders wishing to provide an equal item should do so with their bids. The City shall have the sole right to determine whether or not said item is equal.
- 9.2 The required determination and justification have been duly prepared, and a copy may be requested in accordance with the Massachusetts Public Records Law, M.G.L. c. 66, §10.

END OF SECTION

**CITY OF NEWTON
DEPARTMENT OF PURCHASING**

BID FORM #22-46

- A. The undersigned proposes to supply and deliver the materials specified below in full accordance with the Contract Documents and Project Manual supplied by the City of Newton entitled:

NEWTON FREE LIBRARY PARKING LOT IMPROVEMENTS

for the contract price specified below, subject to additions and deduction according to the terms of the specifications.

- B. This bid includes addendum number(s) _____, _____, _____, _____,

- C. The Contractor shall insert its Total Bid Price in ink, in both words and figures.

(1) _____ Dollars and \$ _____
(Total Bid Price from the Item Sheets at pp. 67-84 below.)

COMPANY NAME: _____

- D. The undersigned has completed and submits herewith the following documents:

- Bidder's Qualifications and References Form, 2 pages
- Signed Bid Form, 2 pages
- Item Sheets, 18 pages
- Certificate of Non-Collusion, 1 page
- Certificate of Foreign Corporation, 1 page
- Business Category Form, 1 page
- Certificate of Tax Compliance, 1 page
- Debarment Letter, 1 page
- IRS Form W-9, 1 page
- A five percent (5%) bid deposit

- E. Prompt Payment Discounts. Bidders are encouraged to offer discounts in exchange for an expedited payment. Payments may be issued earlier than the general goal of within 30 days of receipt of the invoice only when in exchange for discounted prices. Discounts will not be considered in determining the lowest responsible bidder.

Prompt Payment Discount _____ % _____ Days

Prompt Payment Discount _____ % _____ Days

Prompt Payment Discount _____ % _____ Days

- F. The undersigned agrees that, if selected as general contractor, s/he will within five days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the City of Newton, execute a contract in accordance with the terms of this bid **and furnish a labor and materials payment bond** of a surety company qualified to do business under the laws of the commonwealth and satisfactory to the City of Newton in the **sum not less than 50% of the contract price**, the premiums for which are to be paid by the contractor and are included in the contract price.

The undersigned hereby certifies that s/he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work and that s/he will comply fully with all laws and regulations applicable to awards made subject to section forty-four A of M.G.L. c.30, §39M.

The undersigned certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (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 (“OSHA”) 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 OSHA that is at least 10 hours in duration. The undersigned understands that any employee found on a worksite subject to this section without documentation of successful completion of 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 shall be subject to immediate removal.

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

The undersigned further certifies under the penalties of perjury that they have familiarized themselves with the changes to the Prevailing Wage Rates, Price Adjustment Clauses, in accordance to Chapter 303 Acts of 2008.

G. Environmentally preferable products information (which is requested but which will not be considered in awarding a contract):

Description of environmental attributes of Bidder’s goods or services:

Steps taken to (a) identify any positive or negative environmental attributes of products or services and (b) ensure that those attributes are being addressed as part of operations:

Date _____

(Name of General Bidder)

BY: _____

(Printed Name and Title of Signatory)

(Business Address)

(City, State Zip)

(Telephone) / (FAX)

(E-mail address)

NOTE: If the bidder is a corporation, indicate state of incorporation under signature, and affix corporate seal; if a partnership, give full names and residential addresses of all partners; if an individual, give residential address if different from business address; and, if operating as a d/b/a give full legal identity. Attach additional pages as necessary.

END OF SECTION

CITY OF NEWTON

BIDDER'S QUALIFICATIONS AND REFERENCES FORM

All questions must be answered, and the data given must be clear and comprehensive. Please type or print legibly. If necessary, add additional sheets for starred items. This information will be utilized by the City of Newton for purposes of determining bidder responsiveness and responsibility with regard to the requirements and specifications of the Contract.

- 1. FIRM NAME: _____
- 2. WHEN ORGANIZED: _____
- 3. INCORPORATED? YES NO DATE AND STATE OF INCORPORATION: _____
- 4. IS YOUR BUSINESS A **MBE**? YES NO **WBE**? YES NO or **MWBE**? YES NO
- * 5. LIST ALL CONTRACTS CURRENTLY ON HAND, SHOWING CONTRACT AMOUNT AND ANTICIPATED DATE OF COMPLETION:

- * 6. HAVE YOU EVER FAILED TO COMPLETE A CONTRACT AWARDED TO YOU?
 YES NO
IF YES, WHERE AND WHY?

- * 7. HAVE YOU EVER DEFAULTED ON A CONTRACT? YES NO
IF YES, PROVIDE DETAILS.

- * 8. LIST YOUR VEHICLES/EQUIPMENT AVAILABLE FOR THIS CONTRACT:

- * 9. IN THE SPACES FOLLOWING, PROVIDE INFORMATION REGARDING CONTRACTS COMPLETED BY YOUR FIRM SIMILAR IN NATURE TO THE PROJECT BEING BID. A MINIMUM OF FOUR (4) CONTRACTS SHALL BE LISTED. PUBLICLY BID CONTRACTS ARE PREFERRED, BUT NOT MANDATORY.

PROJECT NAME: _____
OWNER: _____
CITY/STATE: _____

DOLLAR AMOUNT: \$ _____ DATE COMPLETED: _____
PUBLICLY BID? YES NO
TYPE OF WORK?: _____
CONTACT PERSON: _____ TELEPHONE #: (____) _____
CONTACT PERSON'S RELATION TO PROJECT?: _____

(i.e., contract manager, purchasing agent, etc.)

PROJECT NAME: _____
OWNER: _____
CITY/STATE: _____
DOLLAR AMOUNT: \$ _____ DATE COMPLETED: _____
PUBLICLY BID? _____ YES _____ NO
TYPE OF WORK?: _____
CONTACT PERSON: _____ TELEPHONE #: (____) _____
CONTACT PERSON'S RELATION TO PROJECT?: _____
(i.e., contract manager, purchasing agent, etc.)

PROJECT NAME: _____
OWNER: _____
CITY/STATE: _____
DOLLAR AMOUNT: \$ _____ DATE COMPLETED: _____
PUBLICLY BID? _____ YES _____ NO
TYPE OF WORK?: _____
CONTACT PERSON: _____ TELEPHONE #: (____) _____
CONTACT PERSON'S RELATION TO PROJECT?: _____
(i.e., contract manager, purchasing agent, etc.)

PROJECT NAME: _____
OWNER: _____
CITY/STATE: _____
DOLLAR AMOUNT: \$ _____ DATE COMPLETED: _____
PUBLICLY BID? _____ YES _____ NO
TYPE OF WORK?: _____
CONTACT PERSON: _____ TELEPHONE #: (____) _____
CONTACT PERSON'S RELATION TO PROJECT?: _____
(i.e., contract manager, purchasing agent, etc.)

10. The undersigned certifies that the information contained herein is complete and accurate and hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the City of Newton in verification of the recitals comprising this statement of Bidder's qualifications and experience.

DATE: _____ BIDDER: _____

SIGNATURE: _____

PRINTED NAME: _____ TITLE: _____

END OF SECTION

CERTIFICATE OF NON-COLLUSION

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

(Signature of individual)

Name of Business

CERTIFICATE OF FOREIGN CORPORATION

The undersigned hereby certifies that it has been duly established, organized, or chartered as a corporation under the laws of:

(Jurisdiction)

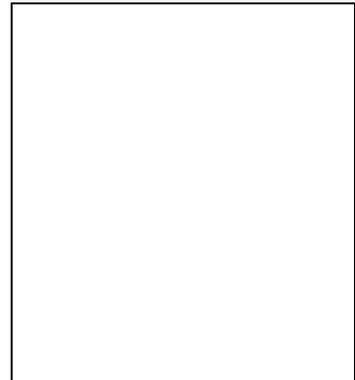
The undersigned further certifies that it has complied with the requirements of M.G.L. c. 30, §39L (if applicable) and with the requirements of M.G.L. c. 156D, §15.03 relative to the registration and operation of foreign corporations within the Commonwealth of Massachusetts.

Name of person signing proposal

Signature of person signing proposal

Name of Business (Please Print or Type)

Affix Corporate Seal here



Business Category Information Form*

IFB No. 22-46

Library Parking Lot Improvements

Business Type Categories*	Select All That Apply
MBE: Minority-Owned Business Enterprise	
WBE: Women-Owned Business Enterprise	
VBE: Veteran Business Enterprise	
SDVOBE: Service-Disabled Veteran-Owned Business Enterprises	
DOBE: Disability-Owned Business Enterprise	
LGBTBE: Lesbian, Gay, Bisexual, Transgender Business Enterprise	

*Information is being collected as part of a City initiative to open contract opportunities to underrepresented vendors.

I do not wish to complete this form.

There is no penalty for persons who do not complete this Form, and whether or not the Form is completed will not be taken into consideration in awarding a bid.

I certify that the foregoing information is true and correct.

By: _____

Date:

CERTIFICATION OF TAX COMPLIANCE

Pursuant to M.G.L. c.62C, §49A and requirements of the City, the undersigned acting on behalf of the Contractor certifies under the penalties of perjury that the Contractor is in compliance with all laws of the Commonwealth relating to taxes including payment of all local taxes, fees, assessments, betterments and any other local or municipal charges (unless the Contractor has a pending abatement application or has entered into a payment agreement with the entity to which such charges were owed), reporting of employees and contractors, and withholding and remitting child support.*

**Signature of Individual (Mandatory)

*** Contractor's Social Security Number
(Voluntary) or Federal Identification Number

Print Name: _____

Date: _____

OR

Company Name
(Corporation, Partnership, LLC, etc.)

By: _____
**Corporate Officer (Mandatory)

Print Name: _____

Date: _____

* The provision in this Certification relating to child support applies only when the Contractor is an individual.

** Approval of a contract or other agreement will not be granted until the City receives a signed copy of this Certification.

*** Your social security number may be furnished to the Massachusetts Department of Revenue to determine whether you have met tax filing or tax payment obligations. Providers who fail to correct their non-filing or delinquency will not have a contract or other agreement issued, renewed, or extended.

**Request for Taxpayer
 Identification Number and Certification**

**Give form to the
 requester. Do not
 send to the IRS.**

Name (as shown on your income tax return)

Business name, if different from above

Check appropriate box: Individual/Sole proprietor Corporation Partnership
 Limited liability company. Enter the tax classification (D=disregarded entity, C=corporation, P=partnership) ▶ -----
 Other (see instructions) ▶

Address (number, street, and apt. or suite no.)

City, state, and ZIP code

List account number(s) here (optional)

Requester's name and address (optional)

X Exempt payee

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on Line 1 to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social security number

or

Employer identification number

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
- I am a U.S. citizen or other U.S. person (defined below).

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the Certification, but you must provide your correct TIN. See the instructions on page 4.

Sign Here **Signature of U.S. person** ▶ **Date** ▶ **Name**

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued).
- Certify that you are not subject to backup withholding, or
- Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income.

Note. If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.

The person who gives Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States is in the following cases:

- The U.S. owner of a disregarded entity and not the entity,

City of Newton



Mayor
Ruthanne Fuller

Purchasing Department
Nicholas Read ☎ *Chief Procurement Officer*
1000 Commonwealth Avenue
Newton Centre, MA 02459-1449
purchasing@newtonma.gov

Telephone
(617) 796-1220
Fax:
(617) 796-1227
TDD/TTY
(617) 796-1089

Date _____

Vendor _____

Re: Debarment Letter for Invitation For Bid # _____

As a potential vendor on the above contract, the City requires that you provide a debarment/suspension certification indicating that you are in compliance with the below Federal Executive Order. Certification can be done by completing and signing this form.

Debarment:

Federal Executive Order (E.O.) 12549 "Debarment and Suspension" requires that all contractors receiving individual awards, using federal funds, and all sub-recipients certify that the organization and its principals are not debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency from doing business with the Federal Government.

I hereby certify under pains and penalties of perjury that neither I nor any principal(s) of the Company identified below is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.

(Name)

(Company)

(Address)

(Address)
PHONE _____ FAX _____
EMAIL _____

Signature

Date

If you have questions, please contact Nicholas Read, Chief Procurement Officer at (617) 796-1220.

CONTRACT FORMS

The awarded bidder will be required to complete and submit documents substantially similar in form to the following.

These forms may need to be modified on account of changed circumstances and are provided for informational purposes only.

CITY - CONTRACTOR AGREEMENT

CONTRACT NO. C - _____

THIS AGREEMENT made this ___ day of _____ in the year Two Thousand Twenty-Two by and between the CITY OF NEWTON, a municipal corporation organized and existing under the laws of the Commonwealth of Massachusetts, hereinafter referred to as the CITY, acting through its Chief Procurement Officer, but without personal liability to him, and hereinafter referred to as the CONTRACTOR.

The parties hereto for the considerations hereinafter set forth agree as follows:

ARTICLE 1. STATEMENT OF WORK. The Contractor shall furnish all labor, materials, and equipment and perform all work required in strict accordance with the Contract Documents for the following project:

NEWTON FREE LIBRARY PARKING LOT IMPROVEMENTS

ARTICLE 2. TIME OF COMPLETION. The Contractor shall commence work under this Contract on the date specified in the written notice of the City to proceed and shall fully complete all work hereunder within the time specified in the Summary of Work and Specific Work Requirements of the Project Manual. Time is of the essence with regard to this contract. Failure to complete within the time specified shall be subject to the assessment of liquidated damages in accordance with the provisions contained in the Project Manual. **The start date is the date on which the Notice to Proceed is issued, which is anticipated to be April 1, 2022. All work must be completed prior to December 31, 2022.**

ARTICLE 3. THE CONTRACT PRICE. The City shall pay the Contractor for the full and satisfactory performance of the Contract, in current funds a sum not to exceed:

§

ARTICLE 4. CONTRACT DOCUMENTS. The Contract Documents consist of the following documents, which are either attached to this Agreement or are incorporated herein by reference:

- a. This CITY-CONTRACTOR Agreement;
- b. The City's Invitation For Bid #22-46 issued by the Purchasing Department;
- c. The Project Manual for: **NEWTON FREE LIBRARY PARKING LOT IMPROVEMENTS** including the Instructions to Bidders; General Conditions; Special Conditions; MWBE/AA Requirements, Wage Rate Requirements and Wage Rate Schedule(s) including any updated prevailing wage rate schedules if applicable; The Supplementary Special Conditions; General Requirements and Project Specifications; and Drawings, if included or referenced therein;
- d. Addendum Number(s) _____;
- e. The Bid Response of the CONTRACTOR submitted for this Project and accompanying documents and certifications;
- f. Certificate(s) of Insurance and surety bond(s) submitted by the CONTRACTOR in connection with this Project;
- g. Duly authorized and executed Amendments, Change Orders or Shipping Orders issued by the CITY after execution of this CITY-CONTRACTOR Agreement.

This CITY-CONTRACTOR Agreement, together with the other documents enumerated in this Article, constitute the entire Agreement between the CITY and the CONTRACTOR.

ARTICLE 5. ALTERNATES. The following Alternates have been accepted and their costs are included in the Contract Price stated in Article 3 of this Agreement:

Alternates: _____

ARTICLE 6. INSURANCE REQUIREMENTS

The Contractor shall provide insurance coverage as listed below. This insurance shall be provided at the Contractor's expense and shall be in full force and effect during the full term of this Contract.

WORKER'S COMPENSATION

Worker's Compensation: Per M.G.L. c. 149, §34 and c. 152 as amended.

COMMERCIAL GENERAL LIABILITY

Personal Injury	\$500,000 each occurrence \$1,000,000 aggregate
Property Damage	\$500,000 each occurrence \$1,000,000 aggregate

VEHICLE LIABILITY

Personal Injury	\$500,000 each person \$1,000,000 aggregate
Property Damage	\$300,000 each occurrence \$500,000 aggregate

The City and Environmental Partners Group, LLC shall be named as additional insured parties on the Contractor's Liability Policies.

The Contractor shall not commence the work until proof of compliance with this has been furnished to the City by submitting one copy of a properly endorsed insurance certificate issued by a company authorized to write insurance in the Commonwealth. This certificate shall indicate that the contractual liability coverage is in force.

The Contractor shall file the original and one certified copy of all policies with the City within ten (10) days after contract award. If the City is damaged by the Contractor's failure to maintain such insurance and to so notify the City, then the Contractor shall be responsible for all reasonable costs attributable thereto.

Cancellation of any insurance required by this contract, whether by the insurer or the insured, shall not be valid unless written notice thereof is given by the party proposing cancellation to the other party and City at least thirty days prior to the effective date thereof, which shall be expressed in said notice.

ARTICLE 7. APPLICABLE STATUTES. All applicable federal, state and local laws and regulations are incorporated herein by reference and the Contractor agrees to comply with same.

IN WITNESS WHEREOF, the parties have caused this instrument to be executed under seal the day and year first above written.

CONTRACTOR

CITY OF NEWTON

By _____

By _____
Chief Procurement Officer

Print Name _____

Date _____

Title _____

By _____
Commissioner of Public Works

Date _____

Date _____

Affix Corporate Seal Here

Certified that City funds are available in the following accounts:

Approved as to Legal Form and Character

By _____
Associate City Solicitor

I further certify that the Mayor, or her designee, is authorized to execute contracts and approve change orders.

Date _____

CONTRACT & BONDS ARE APPROVED

By _____
Comptroller of Accounts

By _____
Mayor or her designee

Date _____

Date _____

CERTIFICATE OF AUTHORITY – CORPORATE

- 1 I hereby certify that I am the Clerk/Secretary of _____
(insert full name of Corporation)
- 2 corporation, and that _____
(insert the name of officer who signed the **contract and bonds.**)
- 3 is the duly elected _____
(insert the title of the officer in line 2)
- 4 of said corporation, and that on _____
(insert a date that is **ON OR BEFORE** the date the officer signed the **contract and bonds.**)

at a duly authorized meeting of the Board of Directors of said corporation, at which all the directors were present or waived notice, it was voted that

5. _____ the _____
(insert **name** from line 2) (insert **title** from line 3)

of this corporation be and hereby is authorized to execute contracts and bonds in the name and on behalf of said corporation, and affix its Corporate Seal thereto, and such execution of any contract of obligation in this corporation's name and on its behalf, with or without the Corporate Seal, shall be valid and binding upon this corporation; and that the above vote has not been amended or rescinded and remains in full force and effect as of the date set forth below.

6. ATTEST: _____ *AFFIX CORPORATE*
(Signature of **Clerk or Secretary**)* *SEAL HERE*
7. Name: _____
(Please print or type name in line 6)*
8. Date: _____
(insert a date that is **ON OR AFTER** the date the officer signed the **contract and bonds.**)

* The name and signature inserted in lines 6 & 7 **must** be that of the **Clerk or Secretary** of the corporation.

CITY OF NEWTON, MASSACHUSETTS

PAYMENT BOND

Know All Men By These Presents:

That we, _____, as PRINCIPAL, and _____, as SURETY, are held and firmly bound unto the City of Newton as Obligee, in the sum of _____ dollars (\$) to be paid to the Obligee, for which payments well and truly to be made, we bind ourselves, our respective heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Whereas, the said PRINCIPAL has made a contract with the Obligee, bearing the date of _____, 2022 for the construction of _____ in Newton, Massachusetts. (Project Title)

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

In Witness Whereof, the PRINCIPAL and SURETY have hereto set their hands and seals this ___day of___ 2022.

PRINCIPAL

SURETY

BY _____

BY _____

(SEAL)

(ATTORNEY-IN-FACT) (SEAL)

(Title)

ATTEST: _____

ATTEST: _____

**CITY OF NEWTON, MASSACHUSETTS
PURCHASING DEPARTMENT
GENERAL TERMS AND CONDITIONS**

1. The right is reserved to reject any and all bids, to waive informalities, and to make award as may be determined to be in the best interest of the City of Newton.
2. Prices quoted must include delivery to the City, as specified on the Work Order.
3. No charges will be allowed for packing, crating, freight, Express or cartage unless specifically stated and included in the bid.
4. The award to the successful bidder may be canceled if successful bidder shall fail to prosecute the work with promptness and diligence.
5. Time in connection with discount offered will be computed from the date of delivery to the City, as specified on Work order, or from date correct invoice is received by the City, if the latter date is later than the date of delivery.
6. The successful bidder shall replace, repair or make good, without cost to the City, any defects or faults arising within one (1) year after date of acceptance of articles furnished hereunder (acceptance not to be unreasonably delayed) resulting from imperfect or defective work done or materials furnished by the Seller.
7. The Seller shall indemnify and save harmless the City and all persons acting for on behalf of it from all suits and claims against them, or any of them, arising from or occasioned by the use of any material, equipment or apparatus, or any part thereof, which infringes or is alleged to infringe on any patent rights. In case such material, equipment or apparatus, or any part thereof, in any such suit is held to constitute infringement, the Seller, within a reasonable time, will at its expense, and as the City may elect, replace such material, equipment or apparatus with non-infringing material, equipment or apparatus, or remove the material, equipment or apparatus, and refund the sums paid therefor.
8. The successful bidder shall comply with all applicable Federal State and Local laws and regulations.
9. Purchases made by the City are exempt from Federal excise taxes and bid prices must exclude any such taxes. Tax exemption certificates will be furnished upon request.
10. If so stated in the Invitation for Bid the successful bidder will be required to furnish a performance and/or a labor and material payment bond, in an amount, in a form and with a surety satisfactory to the City. The bidder shall be responsible for the cost of the bond(s).
11. If the Invitation for Bids requires bid surety, this surety shall be in the form of a cash, bid bond, cashier's check, treasurer's check, or certified check on a responsible bank, payable to the City of Newton, and must be filed with the original bid in the Office of the Purchasing Agent. Failure to do so will lead to rejection of bid. The bid surety will be returned to the successful bidder within seven (7) days execution of awarded, and approval by the City of performance and/or payment bond(s). In case of default, the bid surety shall be forfeited to the City.
12. Verbal orders are not binding on the City and deliveries made or work done without formal Work Order or Contract are at the risk of the Seller or Contractor and may result in an unenforceable claim.
13. The Seller shall agree to indemnify, defend and hold the City harmless from any and all claims arising out of the performance of this contract.
14. "Equality - An item equal to that named or described in the specifications of the contract may be furnished by the Vendor and the naming of any commercial name, trademark or other identification shall not be construed to exclude any item or manufacturer not mentioned by name or as limiting competition but shall establish a standard of equality only. An item shall be considered equal to the item so named or described if (1) it is at least equal in quality, durability, appearance, strength and design; (2) it will perform at least equally the function imposed by the general design for the

work being contracted for or the material being purchased; and (3) it conforms substantially, even with deviations, to the detailed requirements for the item in the specifications. The name and identification of all materials other than the one specifically named shall be submitted to the City in writing for approval, prior to purchase, use or fabrication of such items.

Subject to the provisions of M.G.L., Ch. 30, Sec. 39J, approval shall be at the sole discretion of the City, shall be in writing to be effective, and the decision of the City shall be final. The City may require tests of all materials so submitted to establish quality standards at the Vendor's expense. All directions, specifications and recommendations by manufacturers for installation, handling, storing, adjustment and operation of their equipment shall be complied with; responsibility for proper performance shall continue to rest with the Vendor.

For the use of material other than the one specified, the Vendor shall assume the cost of and responsibility for satisfactorily accomplishing all changes in the work as shown. If no manufacturer is named, the Vendor shall submit the product he intends to use for approval of the City.

Except as otherwise provided for by the provisions of M.G.L., Ch. 30, Sec. 39J, the Vendor shall not have any right of appeal from the decision of the City condemning any materials furnished if the Vendor fails to obtain the approval for substitution under this clause. If any substitution is more costly, the Vendor shall pay for such costs."

15. Notice is hereby given that the City of Newton Minority/Women Business Enterprise Plan dated December 1999 is applicable to all City of Newton contracts for materials and supplies. A copy of this plan may be obtained from the Purchasing Department.

16. Right To Know: Any vendor who receives an order or orders resulting from this invitation agrees to submit a Material Safety Data Sheet (MSDS) for each toxic or hazardous substance or mixture containing such substance, pursuant to M.G.L., Ch. 111F, SS8, 9 and 10 and the regulations contained in 441 CMR SS 21.06 when deliveries are made. The vendor agrees to deliver all containers properly labeled pursuant to M.G.L. Ch. 111F, SS 7 and the regulations contained in 441 CMR SS 21.05. Failure to submit an MSDS and/or label on each container will place the vendor in noncompliance with the work order. Failure to furnish MSDSs and/or labels on each container may result in civil or criminal penalties, including bid debarment and action to prevent the vendor from selling said substances or mixtures containing said substances within the Commonwealth. All vendors furnishing substances or mixtures subject to Chapter 111F of the M.G.L. are cautioned to obtain and read the law and rules and regulations referred to above. Copies can be obtained from the State House Book Store, Secretary of State, State House, Room 117, Boston, MA 02133, (617-727-2834) for \$2.00 plus \$.65 postage.

17. INSURANCE REQUIREMENTS

The Contractor shall provide insurance coverage as listed below. This insurance shall be provided at the Contractor's expense and shall be in full force and effect during the full term of this Contract.

WORKER'S COMPENSATION

Worker's Compensation: Per M.G.L. c. 149, §34 and c. 152 as amended.

COMMERCIAL GENERAL LIABILITY

Personal Injury	\$500,000 each occurrence \$1,000,000 aggregate
Property Damage	\$500,000 each occurrence \$1,000,000 aggregate

VEHICLE LIABILITY

Personal Injury	\$500,000 each person \$1,000,000 aggregate
Property Damage	\$300,000 each occurrence \$500,000 aggregate

The City and Environmental Partners Group, LLC shall be named as additional insured parties on the Contractor's Liability Policies.

The Contractor shall not commence the work until proof of compliance with this has been furnished to the City by submitting one copy of a properly endorsed insurance certificate issued by a company authorized to write insurance in the Commonwealth. This certificate shall indicate that the contractual liability coverage is in force.

The Contractor shall file the original and one certified copy of all policies with the City within ten (10) days after contract award. If the City is damaged by the Contractor's failure to maintain such insurance and to so notify the City, then the Contractor shall be responsible for all reasonable costs attributable thereto.

Cancellation of any insurance required by this contract, whether by the insurer or the insured, shall not be valid unless written notice thereof is given by the party proposing cancellation to the other party and City at least thirty days prior to the effective date thereof, which shall be expressed in said notice.

**FAILURE TO COMPLY WITH THESE TERMS AND CONDITIONS COULD RESULT IN THE
CANCELLATION OF YOUR CONTRACT.**

CITY OF NEWTON

WAGE RATE REQUIREMENTS

1. GENERAL

- A. This section summarizes the requirements for the payment of wages to laborers and mechanics employed under the Contract.
- B. Other duties and requirements of law which may not be specified in this section apply and are inherently a part of the Contract.

2. WAGE RATES

- A. The rate per hour to be paid to mechanics, apprentices, teamsters, chauffeurs, and laborers employed on the Work shall not be less than the rate of wages in the attached "Minimum Wage Rates" as determined by the Commissioner of Labor and Industries. This schedule shall continue to be the minimum rate of wages for said employees during the life of this Contract.
- B. Keep posted on the site a legible copy of said schedule. Keep on file the wage rates and classifications of labor employed on this Work in order that they may be available for inspection by the Owner, Administrator, or the Architect.
- C. Apprentices employed pursuant to this determination of wage rates must be registered and approved by the State Apprenticeship Council wherever rates for journeymen or apprentices are not listed.
- D. Pay reserve police officers employed on the Work the prevailing rate of wages paid to regular police officers as required by M.G.L. c149, Sec. 34B, as amended. Such police officers shall be covered by Workmen's Compensation Insurance and Employers Liability Insurance by the Contractor.
- E. **The Contractor and all subcontractors shall, on a weekly basis throughout the term of the contract, provide to the City of Newton certified payroll affidavits verifying compliance with M.G.L. c.149, Sec. 27, 27A, and 27B.** The Contractor is obligated to provide such records to the City directly on a weekly basis. The City may assess a penalty of \$100 for each day beyond the required submission date that such records are received, which amount shall be deducted from any amounts to the Contractor from the City. In the event of chronic late submissions, the City shall report the same to the Office of the Attorney General.
- F. The Contractor and all subcontractors shall provide a Statement of Compliance within 15 days of the completion of its portion of the work. This statement shall be submitted to the Owner on the form found elsewhere in this section.
- G. The Contractor shall maintain accurate and complete records, including payroll records, during the Contract term and for three years thereafter.

END OF SECTION



CHARLES D. BAKER
Governor

RAKYN E. POLITO
Lt. Governor

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

Prevailing Wage Rates

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

ROSALIN ACOSTA
Secretary
MICHAEL FLANAGAN
Director

Awarding Authority: City of Newton
Contract Number: IFB #22-46 **City/Town:** NEWTON
Description of Work: Newton Free Library Parking Lot Improvements, reconstruction of lot surface including new drainage, stormwater management, landscaping and streetscaping.
Job Location: 330 Homer St

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Construction						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2021	\$37.05	\$13.41	\$16.01	\$0.00	\$66.47
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2021	\$37.12	\$13.41	\$16.01	\$0.00	\$66.54
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2021	\$37.24	\$13.41	\$16.01	\$0.00	\$66.66
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$103.05	\$9.40	\$23.12	\$0.00	\$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.93	\$9.10	\$17.57	\$0.00	\$68.60
	06/01/2022	\$42.93	\$9.10	\$17.57	\$0.00	\$69.60
	12/01/2022	\$43.93	\$9.10	\$17.57	\$0.00	\$70.60
	06/01/2023	\$44.93	\$9.10	\$17.57	\$0.00	\$71.60
	12/01/2023	\$46.18	\$9.10	\$17.57	\$0.00	\$72.85
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 1 (HEAVY & HIGHWAY)</i>	12/01/2021	\$41.93	\$9.10	\$17.57	\$0.00	\$68.60
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	12/01/2020	\$38.10	\$12.80	\$9.45	\$0.00	\$60.35
ASPHALT RAKER <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
	06/01/2022	\$42.43	\$9.10	\$17.57	\$0.00	\$69.10
	12/01/2022	\$43.43	\$9.10	\$17.57	\$0.00	\$70.10
	06/01/2023	\$44.43	\$9.10	\$17.57	\$0.00	\$71.10
	12/01/2023	\$45.68	\$9.10	\$17.57	\$0.00	\$72.35
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 1 (HEAVY & HIGHWAY)</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$51.38	\$14.00	\$16.05	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$51.38	\$14.00	\$16.05	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
	06/01/2022	\$42.43	\$9.10	\$17.57	\$0.00	\$69.10
	12/01/2022	\$43.43	\$9.10	\$17.57	\$0.00	\$70.10
	06/01/2023	\$44.43	\$9.10	\$17.57	\$0.00	\$71.10
	12/01/2023	\$45.68	\$9.10	\$17.57	\$0.00	\$72.35
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.93	\$9.10	\$17.57	\$0.00	\$68.60
	06/01/2022	\$42.93	\$9.10	\$17.57	\$0.00	\$69.60
	12/01/2022	\$43.93	\$9.10	\$17.57	\$0.00	\$70.60
	06/01/2023	\$44.93	\$9.10	\$17.57	\$0.00	\$71.60
	12/01/2023	\$46.18	\$9.10	\$17.57	\$0.00	\$72.85
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 1 (HEAVY & HIGHWAY)</i> For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"	12/01/2021	\$41.93	\$9.10	\$17.57	\$0.00	\$68.60
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2020	\$46.10	\$7.07	\$17.98	\$0.00	\$71.15

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$29.97	\$7.07	\$11.69	\$0.00	\$48.73
2	65	\$29.97	\$7.07	\$11.69	\$0.00	\$48.73
3	70	\$32.27	\$7.07	\$12.59	\$0.00	\$51.93
4	75	\$34.58	\$7.07	\$13.49	\$0.00	\$55.14
5	80	\$36.88	\$7.07	\$14.38	\$0.00	\$58.33
6	85	\$39.19	\$7.07	\$15.29	\$0.00	\$61.55
7	90	\$41.49	\$7.07	\$16.18	\$0.00	\$64.74
8	95	\$43.80	\$7.07	\$17.09	\$0.00	\$67.96

Notes:

Apprentice to Journeyworker Ratio:1:4

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (NEWTON)</i>	02/01/2022	\$57.15	\$11.39	\$22.34	\$0.00	\$90.88
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Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Newton

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.58	\$11.39	\$22.34	\$0.00	\$62.31
2	60	\$34.29	\$11.39	\$22.34	\$0.00	\$68.02
3	70	\$40.01	\$11.39	\$22.34	\$0.00	\$73.74
4	80	\$45.72	\$11.39	\$22.34	\$0.00	\$79.45
5	90	\$51.44	\$11.39	\$22.34	\$0.00	\$85.17

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

CAISSON & UNDERPINNING BOTTOM MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$42.33	\$9.10	\$17.72	\$0.00	\$69.15
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For apprentice rates see "Apprentice- LABORER"

CAISSON & UNDERPINNING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$41.18	\$9.10	\$17.72	\$0.00	\$68.00
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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$41.18	\$9.10	\$17.72	\$0.00	\$68.00
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
	06/01/2022	\$42.43	\$9.10	\$17.57	\$0.00	\$69.10
	12/01/2022	\$43.43	\$9.10	\$17.57	\$0.00	\$70.10
	06/01/2023	\$44.43	\$9.10	\$17.57	\$0.00	\$71.10
	12/01/2023	\$45.68	\$9.10	\$17.57	\$0.00	\$72.35
For apprentice rates see "Apprentice- LABORER"						
CARPENTER <i>CARPENTERS-ZONE 2 (Eastern Massachusetts)</i>	09/01/2021	\$44.18	\$8.58	\$19.82	\$0.00	\$72.58
	03/01/2022	\$44.78	\$8.58	\$19.82	\$0.00	\$73.18
	09/01/2022	\$45.43	\$8.58	\$19.82	\$0.00	\$73.83
	03/01/2023	\$46.03	\$8.58	\$19.82	\$0.00	\$74.43

Apprentice - CARPENTER - Zone 2 Eastern MA

Effective Date - 09/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.09	\$8.58	\$1.73	\$0.00	\$32.40
2	60	\$26.51	\$8.58	\$1.73	\$0.00	\$36.82
3	70	\$30.93	\$8.58	\$14.63	\$0.00	\$54.14
4	75	\$33.14	\$8.58	\$14.63	\$0.00	\$56.35
5	80	\$35.34	\$8.58	\$16.36	\$0.00	\$60.28
6	80	\$35.34	\$8.58	\$16.36	\$0.00	\$60.28
7	90	\$39.76	\$8.58	\$18.09	\$0.00	\$66.43
8	90	\$39.76	\$8.58	\$18.09	\$0.00	\$66.43

Effective Date - 03/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.39	\$8.58	\$1.73	\$0.00	\$32.70
2	60	\$26.87	\$8.58	\$1.73	\$0.00	\$37.18
3	70	\$31.35	\$8.58	\$14.63	\$0.00	\$54.56
4	75	\$33.59	\$8.58	\$14.63	\$0.00	\$56.80
5	80	\$35.82	\$8.58	\$16.36	\$0.00	\$60.76
6	80	\$35.82	\$8.58	\$16.36	\$0.00	\$60.76
7	90	\$40.30	\$8.58	\$18.09	\$0.00	\$66.97
8	90	\$40.30	\$8.58	\$18.09	\$0.00	\$66.97

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
Step 1&2 \$30.19/ 3&4 \$36.28/ 5&6 \$55.87/ 7&8 \$62.01

Apprentice to Journeyworker Ratio:1:5

CARPENTER WOOD FRAME <i>CARPENTERS-ZONE 2 (Wood Frame)</i>	04/01/2021	\$27.87	\$7.21	\$5.80	\$0.00	\$40.88
	04/01/2022	\$28.62	\$7.21	\$5.80	\$0.00	\$41.63
	04/01/2023	\$28.97	\$7.21	\$5.80	\$0.00	\$41.98

All Aspects of New Wood Frame Work

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Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - CARPENTER (Wood Frame) - Zone 2

Effective Date - 04/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$13.94	\$7.21	\$0.00	\$0.00	\$21.15
2	50	\$13.94	\$7.21	\$0.00	\$0.00	\$21.15
3	55	\$15.33	\$7.21	\$2.00	\$0.00	\$24.54
4	55	\$15.33	\$7.21	\$2.00	\$0.00	\$24.54
5	70	\$19.51	\$7.21	\$5.80	\$0.00	\$32.52
6	70	\$19.51	\$7.21	\$5.80	\$0.00	\$32.52
7	80	\$22.30	\$7.21	\$5.80	\$0.00	\$35.31
8	80	\$22.30	\$7.21	\$5.80	\$0.00	\$35.31

Effective Date - 04/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$14.31	\$7.21	\$0.00	\$0.00	\$21.52
2	50	\$14.31	\$7.21	\$0.00	\$0.00	\$21.52
3	55	\$15.74	\$7.21	\$2.00	\$0.00	\$24.95
4	55	\$15.74	\$7.21	\$2.00	\$0.00	\$24.95
5	70	\$20.03	\$7.21	\$5.80	\$0.00	\$33.04
6	70	\$20.03	\$7.21	\$5.80	\$0.00	\$33.04
7	80	\$22.90	\$7.21	\$5.80	\$0.00	\$35.91
8	80	\$22.90	\$7.21	\$5.80	\$0.00	\$35.91

Notes:
 % Indentured After 10/1/17; 45/45/55/55/70/70/80/80
 Step 1&2 \$19.75/ 3&4 \$24.54/ 5&6 \$32.52/ 7&8 \$35.31

Apprentice to Journeyworker Ratio:1:5

CEMENT MASONRY/PLASTERING BRICKLAYERS LOCAL 3 (NEWTON)	01/01/2020	\$49.07	\$12.75	\$22.41	\$0.62	\$84.85
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Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (Newton)

Effective Date - 01/01/2020

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

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

Apprentice to Journeyworker Ratio:1:3

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CHAIN SAW OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
	06/01/2022	\$42.43	\$9.10	\$17.57	\$0.00	\$69.10
	12/01/2022	\$43.43	\$9.10	\$17.57	\$0.00	\$70.10
	06/01/2023	\$44.43	\$9.10	\$17.57	\$0.00	\$71.10
	12/01/2023	\$45.68	\$9.10	\$17.57	\$0.00	\$72.35
For apprentice rates see "Apprentice- LABORER"						
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$52.38	\$14.00	\$16.05	\$0.00	\$82.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$33.69	\$14.00	\$16.05	\$0.00	\$63.74
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2022	\$53.66	\$8.65	\$23.05	\$0.00	\$85.36
	07/01/2022	\$54.86	\$8.65	\$23.05	\$0.00	\$86.56
	01/01/2023	\$56.06	\$8.65	\$23.05	\$0.00	\$87.76
	07/01/2023	\$57.26	\$8.65	\$23.05	\$0.00	\$88.96
	01/01/2024	\$58.46	\$8.65	\$23.05	\$0.00	\$90.16
	07/01/2024	\$59.66	\$8.65	\$23.05	\$0.00	\$91.36
	01/01/2025	\$60.86	\$8.65	\$23.05	\$0.00	\$92.56

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Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 01/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.83	\$8.65	\$0.00	\$0.00	\$35.48
2	55	\$29.51	\$8.65	\$6.27	\$0.00	\$44.43
3	60	\$32.20	\$8.65	\$6.84	\$0.00	\$47.69
4	65	\$34.88	\$8.65	\$7.41	\$0.00	\$50.94
5	70	\$37.56	\$8.65	\$19.63	\$0.00	\$65.84
6	75	\$40.25	\$8.65	\$20.20	\$0.00	\$69.10
7	80	\$42.93	\$8.65	\$20.77	\$0.00	\$72.35
8	90	\$48.29	\$8.65	\$21.91	\$0.00	\$78.85

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.43	\$8.65	\$0.00	\$0.00	\$36.08
2	55	\$30.17	\$8.65	\$6.27	\$0.00	\$45.09
3	60	\$32.92	\$8.65	\$6.84	\$0.00	\$48.41
4	65	\$35.66	\$8.65	\$7.41	\$0.00	\$51.72
5	70	\$38.40	\$8.65	\$19.63	\$0.00	\$66.68
6	75	\$41.15	\$8.65	\$20.20	\$0.00	\$70.00
7	80	\$43.89	\$8.65	\$20.77	\$0.00	\$73.31
8	90	\$49.37	\$8.65	\$21.91	\$0.00	\$79.93

Notes: Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

DEMO: ADZEMAN LABORERS - ZONE 1	12/01/2021	\$41.33	\$9.10	\$17.57	\$0.00	\$68.00
	06/01/2022	\$42.33	\$9.10	\$17.57	\$0.00	\$69.00
	12/01/2022	\$43.33	\$9.10	\$17.57	\$0.00	\$70.00
	06/01/2023	\$44.33	\$9.10	\$17.57	\$0.00	\$71.00
	12/01/2023	\$45.58	\$9.10	\$17.57	\$0.00	\$72.25

For apprentice rates see "Apprentice- LABORER"

DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 1	12/01/2021	\$42.33	\$9.10	\$17.57	\$0.00	\$69.00
	06/01/2022	\$43.33	\$9.10	\$17.57	\$0.00	\$70.00
	12/01/2022	\$44.33	\$9.10	\$17.57	\$0.00	\$71.00
	06/01/2023	\$45.33	\$9.10	\$17.57	\$0.00	\$72.00
	12/01/2023	\$46.58	\$9.10	\$17.57	\$0.00	\$73.25

For apprentice rates see "Apprentice- LABORER"

DEMO: BURNERS LABORERS - ZONE 1	12/01/2021	\$42.08	\$9.10	\$17.57	\$0.00	\$68.75
	06/01/2022	\$43.08	\$9.10	\$17.57	\$0.00	\$69.75
	12/01/2022	\$44.08	\$9.10	\$17.57	\$0.00	\$70.75
	06/01/2023	\$45.08	\$9.10	\$17.57	\$0.00	\$71.75
	12/01/2023	\$46.33	\$9.10	\$17.57	\$0.00	\$73.00

For apprentice rates see "Apprentice- LABORER"

Issue Date: 02/04/2022

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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 1</i>	12/01/2021	\$42.33	\$9.10	\$17.57	\$0.00	\$69.00
	06/01/2022	\$43.33	\$9.10	\$17.57	\$0.00	\$70.00
	12/01/2022	\$44.33	\$9.10	\$17.57	\$0.00	\$71.00
	06/01/2023	\$45.33	\$9.10	\$17.57	\$0.00	\$72.00
	12/01/2023	\$46.58	\$9.10	\$17.57	\$0.00	\$73.25
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2021	\$42.08	\$9.10	\$17.57	\$0.00	\$68.75
	06/01/2022	\$43.08	\$9.10	\$17.57	\$0.00	\$69.75
	12/01/2022	\$44.08	\$9.10	\$17.57	\$0.00	\$70.75
	06/01/2023	\$45.08	\$9.10	\$17.57	\$0.00	\$71.75
	12/01/2023	\$46.33	\$9.10	\$17.57	\$0.00	\$73.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.33	\$9.10	\$17.57	\$0.00	\$68.00
	06/01/2022	\$42.33	\$9.10	\$17.57	\$0.00	\$69.00
	12/01/2022	\$43.33	\$9.10	\$17.57	\$0.00	\$70.00
	06/01/2023	\$44.33	\$9.10	\$17.57	\$0.00	\$71.00
	12/01/2023	\$45.58	\$9.10	\$17.57	\$0.00	\$72.25
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$68.70	\$9.40	\$23.12	\$0.00	\$101.22
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$73.60	\$9.40	\$23.12	\$0.00	\$106.12
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$103.05	\$9.40	\$23.12	\$0.00	\$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) <i>DRAWBRIDGE - SEIU LOCAL 888</i>	07/01/2020	\$26.77	\$6.67	\$3.93	\$0.16	\$37.53
ELECTRICIAN <i>ELECTRICIANS LOCAL 103</i>	09/01/2021	\$56.36	\$13.00	\$20.54	\$0.00	\$89.90
	03/01/2022	\$57.32	\$13.00	\$20.82	\$0.00	\$91.14
	09/01/2022	\$58.76	\$13.00	\$20.86	\$0.00	\$92.62
	03/01/2023	\$60.43	\$13.00	\$20.91	\$0.00	\$94.34

Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - *ELECTRICIAN - Local 103*

Effective Date - 09/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$22.54	\$13.00	\$0.68	\$0.00	\$36.22
2	40	\$22.54	\$13.00	\$0.68	\$0.00	\$36.22
3	45	\$25.36	\$13.00	\$15.36	\$0.00	\$53.72
4	45	\$25.36	\$13.00	\$15.36	\$0.00	\$53.72
5	50	\$28.18	\$13.00	\$15.84	\$0.00	\$57.02
6	55	\$31.00	\$13.00	\$16.31	\$0.00	\$60.31
7	60	\$33.82	\$13.00	\$16.77	\$0.00	\$63.59
8	65	\$36.63	\$13.00	\$17.25	\$0.00	\$66.88
9	70	\$39.45	\$13.00	\$17.71	\$0.00	\$70.16
10	75	\$42.27	\$13.00	\$18.19	\$0.00	\$73.46

Effective Date - 03/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$22.93	\$13.00	\$0.69	\$0.00	\$36.62
2	40	\$22.93	\$13.00	\$0.69	\$0.00	\$36.62
3	45	\$25.79	\$13.00	\$15.62	\$0.00	\$54.41
4	45	\$25.79	\$13.00	\$15.62	\$0.00	\$54.41
5	50	\$28.66	\$13.00	\$16.10	\$0.00	\$57.76
6	55	\$31.53	\$13.00	\$16.58	\$0.00	\$61.11
7	60	\$34.39	\$13.00	\$17.04	\$0.00	\$64.43
8	65	\$37.26	\$13.00	\$17.52	\$0.00	\$67.78
9	70	\$40.12	\$13.00	\$17.98	\$0.00	\$71.10
10	75	\$42.99	\$13.00	\$18.46	\$0.00	\$74.45

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

Apprentice to Journeyworker Ratio:2:3***

ELEVATOR CONSTRUCTOR <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2022	\$65.62	\$16.03	\$20.21	\$0.00	\$101.86
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Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - ELEVATOR CONSTRUCTOR - Local 4

Effective Date - 01/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.81	\$16.03	\$0.00	\$0.00	\$48.84
2	55	\$36.09	\$16.03	\$20.21	\$0.00	\$72.33
3	65	\$42.65	\$16.03	\$20.21	\$0.00	\$78.89
4	70	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17
5	80	\$52.50	\$16.03	\$20.21	\$0.00	\$88.74

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

Apprentice to Journeyworker Ratio:1:1

ELEVATOR CONSTRUCTOR HELPER <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2022	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17
For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"						
FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 1 (HEAVY & HIGHWAY)</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2021	\$46.53	\$13.75	\$15.80	\$0.00	\$76.08
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2021	\$48.06	\$13.75	\$15.80	\$0.00	\$77.61
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2021	\$23.16	\$13.75	\$15.80	\$0.00	\$52.71
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 103</i>	09/01/2021	\$56.36	\$13.00	\$20.54	\$0.00	\$89.90
For apprentice rates see "Apprentice- ELECTRICIAN"						
	03/01/2022	\$57.32	\$13.00	\$20.82	\$0.00	\$91.14
	09/01/2022	\$58.76	\$13.00	\$20.86	\$0.00	\$92.62
	03/01/2023	\$60.43	\$13.00	\$20.91	\$0.00	\$94.34
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS LOCAL 103</i>	09/01/2021	\$43.40	\$13.00	\$18.37	\$0.00	\$74.77
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
	03/01/2022	\$44.71	\$13.00	\$18.74	\$0.00	\$76.45
	09/01/2022	\$46.42	\$13.00	\$18.87	\$0.00	\$78.29
	03/01/2023	\$48.34	\$13.00	\$19.01	\$0.00	\$80.35
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$41.76	\$14.00	\$16.05	\$0.00	\$71.81
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 1 (HEAVY & HIGHWAY)</i>	12/01/2021	\$24.50	\$9.10	\$17.57	\$0.00	\$51.17
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE I</i>	09/01/2021	\$49.38	\$8.58	\$20.12	\$0.00	\$78.08
	03/01/2022	\$50.18	\$8.58	\$20.12	\$0.00	\$78.88

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Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - FLOORCOVERER - Local 2168 Zone 1

Effective Date - 09/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.69	\$8.58	\$1.79	\$0.00	\$35.06
2	55	\$27.16	\$8.58	\$1.79	\$0.00	\$37.53
3	60	\$29.63	\$8.58	\$14.75	\$0.00	\$52.96
4	65	\$32.10	\$8.58	\$14.75	\$0.00	\$55.43
5	70	\$34.57	\$8.58	\$16.54	\$0.00	\$59.69
6	75	\$37.04	\$8.58	\$16.54	\$0.00	\$62.16
7	80	\$39.50	\$8.58	\$18.33	\$0.00	\$66.41
8	85	\$41.97	\$8.58	\$18.33	\$0.00	\$68.88

Effective Date - 03/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.09	\$8.58	\$1.79	\$0.00	\$35.46
2	55	\$27.60	\$8.58	\$1.79	\$0.00	\$37.97
3	60	\$30.11	\$8.58	\$14.75	\$0.00	\$53.44
4	65	\$32.62	\$8.58	\$14.75	\$0.00	\$55.95
5	70	\$35.13	\$8.58	\$16.54	\$0.00	\$60.25
6	75	\$37.64	\$8.58	\$16.54	\$0.00	\$62.76
7	80	\$40.14	\$8.58	\$18.33	\$0.00	\$67.05
8	85	\$42.65	\$8.58	\$18.33	\$0.00	\$69.56

Notes: Steps are 750 hrs.
 % After 10/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)
 Step 1&2 \$32.59/ 3&4 \$39.26/ 5&6 \$59.69/ 7&8 \$66.41

Apprentice to Journeyworker Ratio:1:1

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$51.38	\$14.00	\$16.05	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$33.69	\$14.00	\$16.05	\$0.00	\$63.74
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	01/01/2022	\$43.16	\$8.65	\$23.05	\$0.00	\$74.86
	07/01/2022	\$44.36	\$8.65	\$23.05	\$0.00	\$76.06
	01/01/2023	\$45.56	\$8.65	\$23.05	\$0.00	\$77.26
	07/01/2023	\$46.76	\$8.65	\$23.05	\$0.00	\$78.46
	01/01/2024	\$47.96	\$8.65	\$23.05	\$0.00	\$79.66
	07/01/2024	\$49.16	\$8.65	\$23.05	\$0.00	\$80.86
	01/01/2025	\$50.36	\$8.65	\$23.05	\$0.00	\$82.06

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - GLAZIER - Local 35 Zone 2

Effective Date - 01/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.58	\$8.65	\$0.00	\$0.00	\$30.23
2	55	\$23.74	\$8.65	\$6.27	\$0.00	\$38.66
3	60	\$25.90	\$8.65	\$6.84	\$0.00	\$41.39
4	65	\$28.05	\$8.65	\$7.41	\$0.00	\$44.11
5	70	\$30.21	\$8.65	\$19.63	\$0.00	\$58.49
6	75	\$32.37	\$8.65	\$20.20	\$0.00	\$61.22
7	80	\$34.53	\$8.65	\$20.77	\$0.00	\$63.95
8	90	\$38.84	\$8.65	\$21.91	\$0.00	\$69.40

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.18	\$8.65	\$0.00	\$0.00	\$30.83
2	55	\$24.40	\$8.65	\$6.27	\$0.00	\$39.32
3	60	\$26.62	\$8.65	\$6.84	\$0.00	\$42.11
4	65	\$28.83	\$8.65	\$7.41	\$0.00	\$44.89
5	70	\$31.05	\$8.65	\$19.63	\$0.00	\$59.33
6	75	\$33.27	\$8.65	\$20.20	\$0.00	\$62.12
7	80	\$35.49	\$8.65	\$20.77	\$0.00	\$64.91
8	90	\$39.92	\$8.65	\$21.91	\$0.00	\$70.48

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

HOISTING ENGINEER/CRANES/GRADALLS OPERATING ENGINEERS LOCAL 4	12/01/2021	\$51.38	\$14.00	\$16.05	\$0.00	\$81.43
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Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - OPERATING ENGINEERS - Local 4

Effective Date - 12/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$28.26	\$14.00	\$0.00	\$0.00	\$42.26
2	60	\$30.83	\$14.00	\$16.05	\$0.00	\$60.88
3	65	\$33.40	\$14.00	\$16.05	\$0.00	\$63.45
4	70	\$35.97	\$14.00	\$16.05	\$0.00	\$66.02
5	75	\$38.54	\$14.00	\$16.05	\$0.00	\$68.59
6	80	\$41.10	\$14.00	\$16.05	\$0.00	\$71.15
7	85	\$43.67	\$14.00	\$16.05	\$0.00	\$73.72
8	90	\$46.24	\$14.00	\$16.05	\$0.00	\$76.29

Notes:

Apprentice to Journeyworker Ratio:1:6

HVAC (DUCTWORK) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2022	\$53.70	\$13.80	\$25.60	\$2.79	\$95.89
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 103</i>	09/01/2021	\$56.36	\$13.00	\$20.54	\$0.00	\$89.90
	03/01/2022	\$57.32	\$13.00	\$20.82	\$0.00	\$91.14
	09/01/2022	\$58.76	\$13.00	\$20.86	\$0.00	\$92.62
	03/01/2023	\$60.43	\$13.00	\$20.91	\$0.00	\$94.34
For apprentice rates see "Apprentice- ELECTRICIAN"						
HVAC (TESTING AND BALANCING - AIR) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2022	\$53.70	\$13.80	\$25.60	\$2.79	\$95.89
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING - WATER) <i>PIPEFITTERS LOCAL 537</i>	03/01/2021	\$57.94	\$11.70	\$20.24	\$0.00	\$89.88
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PIPEFITTERS LOCAL 537</i>	03/01/2021	\$57.94	\$11.70	\$20.24	\$0.00	\$89.88
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.93	\$9.10	\$17.57	\$0.00	\$68.60
	06/01/2022	\$42.93	\$9.10	\$17.57	\$0.00	\$69.60
	12/01/2022	\$43.93	\$9.10	\$17.57	\$0.00	\$70.60
	06/01/2023	\$44.93	\$9.10	\$17.57	\$0.00	\$71.60
	12/01/2023	\$46.18	\$9.10	\$17.57	\$0.00	\$72.85
For apprentice rates see "Apprentice- LABORER"						
HYDRAULIC DRILLS (HEAVY & HIGHWAY) <i>LABORERS - ZONE 1 (HEAVY & HIGHWAY)</i>	12/01/2021	\$41.93	\$9.10	\$17.57	\$0.00	\$68.60
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
INSULATOR (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	09/01/2021	\$51.40	\$13.80	\$17.14	\$0.00	\$82.34
	09/01/2022	\$53.85	\$13.80	\$17.14	\$0.00	\$84.79

Issue Date: 02/04/2022

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Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

Effective Date - 09/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.70	\$13.80	\$12.42	\$0.00	\$51.92
2	60	\$30.84	\$13.80	\$13.36	\$0.00	\$58.00
3	70	\$35.98	\$13.80	\$14.31	\$0.00	\$64.09
4	80	\$41.12	\$13.80	\$15.25	\$0.00	\$70.17

Effective Date - 09/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.93	\$13.80	\$12.42	\$0.00	\$53.15
2	60	\$32.31	\$13.80	\$13.36	\$0.00	\$59.47
3	70	\$37.70	\$13.80	\$14.31	\$0.00	\$65.81
4	80	\$43.08	\$13.80	\$15.25	\$0.00	\$72.13

Notes:
Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (BOSTON AREA)</i>	09/16/2020	\$48.66	\$8.10	\$25.10	\$0.00	\$81.86
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Apprentice - IRONWORKER - Local 7 Boston

Effective Date - 09/16/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$29.20	\$8.10	\$25.10	\$0.00	\$62.40
2	70	\$34.06	\$8.10	\$25.10	\$0.00	\$67.26
3	75	\$36.50	\$8.10	\$25.10	\$0.00	\$69.70
4	80	\$38.93	\$8.10	\$25.10	\$0.00	\$72.13
5	85	\$41.36	\$8.10	\$25.10	\$0.00	\$74.56
6	90	\$43.79	\$8.10	\$25.10	\$0.00	\$76.99

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

Apprentice to Journeyworker Ratio:**

JACKHAMMER & PAVING BREAKER OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
	06/01/2022	\$42.43	\$9.10	\$17.57	\$0.00	\$69.10
	12/01/2022	\$43.43	\$9.10	\$17.57	\$0.00	\$70.10
	06/01/2023	\$44.43	\$9.10	\$17.57	\$0.00	\$71.10
	12/01/2023	\$45.68	\$9.10	\$17.57	\$0.00	\$72.35

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER	12/01/2021	\$41.18	\$9.10	\$17.57	\$0.00	\$67.85
LABORERS - ZONE 1	06/01/2022	\$42.18	\$9.10	\$17.57	\$0.00	\$68.85
	12/01/2022	\$43.18	\$9.10	\$17.57	\$0.00	\$69.85
	06/01/2023	\$44.18	\$9.10	\$17.57	\$0.00	\$70.85
	12/01/2023	\$45.43	\$9.10	\$17.57	\$0.00	\$72.10

Apprentice - LABORER - Zone 1

Effective Date - 12/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.71	\$9.10	\$17.57	\$0.00	\$51.38
2	70	\$28.83	\$9.10	\$17.57	\$0.00	\$55.50
3	80	\$32.94	\$9.10	\$17.57	\$0.00	\$59.61
4	90	\$37.06	\$9.10	\$17.57	\$0.00	\$63.73

Effective Date - 06/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$25.31	\$9.10	\$17.57	\$0.00	\$51.98
2	70	\$29.53	\$9.10	\$17.57	\$0.00	\$56.20
3	80	\$33.74	\$9.10	\$17.57	\$0.00	\$60.41
4	90	\$37.96	\$9.10	\$17.57	\$0.00	\$64.63

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER (HEAVY & HIGHWAY)	12/01/2021	\$41.18	\$9.10	\$17.57	\$0.00	\$67.85
LABORERS - ZONE 1 (HEAVY & HIGHWAY)						

Apprentice - LABORER (Heavy & Highway) - Zone 1

Effective Date - 12/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.71	\$9.10	\$17.57	\$0.00	\$51.38
2	70	\$28.83	\$9.10	\$17.57	\$0.00	\$55.50
3	80	\$32.94	\$9.10	\$17.57	\$0.00	\$59.61
4	90	\$37.06	\$9.10	\$17.57	\$0.00	\$63.73

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER: CARPENTER TENDER	12/01/2021	\$41.18	\$9.10	\$17.57	\$0.00	\$67.85
LABORERS - ZONE 1	06/01/2022	\$42.18	\$9.10	\$17.57	\$0.00	\$68.85
	12/01/2022	\$43.18	\$9.10	\$17.57	\$0.00	\$69.85
	06/01/2023	\$44.18	\$9.10	\$17.57	\$0.00	\$70.85
	12/01/2023	\$45.43	\$9.10	\$17.57	\$0.00	\$72.10

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: CEMENT FINISHER TENDER <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.18	\$9.10	\$17.57	\$0.00	\$67.85
	06/01/2022	\$42.18	\$9.10	\$17.57	\$0.00	\$68.85
	12/01/2022	\$43.18	\$9.10	\$17.57	\$0.00	\$69.85
	06/01/2023	\$44.18	\$9.10	\$17.57	\$0.00	\$70.85
	12/01/2023	\$45.43	\$9.10	\$17.57	\$0.00	\$72.10
For apprentice rates see "Apprentice- LABORER"						
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.33	\$9.10	\$17.57	\$0.00	\$68.00
	06/01/2022	\$42.33	\$9.10	\$17.57	\$0.00	\$69.00
	12/01/2022	\$43.33	\$9.10	\$17.57	\$0.00	\$70.00
	06/01/2023	\$44.33	\$9.10	\$17.57	\$0.00	\$71.00
	12/01/2023	\$45.58	\$9.10	\$17.57	\$0.00	\$72.25
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
	06/01/2022	\$42.43	\$9.10	\$17.57	\$0.00	\$69.10
	12/01/2022	\$43.43	\$9.10	\$17.57	\$0.00	\$70.10
	06/01/2023	\$44.43	\$9.10	\$17.57	\$0.00	\$71.10
	06/01/2024	\$45.68	\$9.10	\$17.57	\$0.00	\$72.35
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 1 (HEAVY & HIGHWAY)</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.18	\$9.10	\$17.57	\$0.00	\$67.85
	06/01/2022	\$42.18	\$9.10	\$17.57	\$0.00	\$68.85
	12/01/2022	\$43.18	\$9.10	\$17.57	\$0.00	\$69.85
	06/01/2023	\$44.18	\$9.10	\$17.57	\$0.00	\$70.85
	12/01/2023	\$45.43	\$9.10	\$17.57	\$0.00	\$72.10
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.18	\$9.10	\$17.57	\$0.00	\$67.85
	06/01/2022	\$42.18	\$9.10	\$17.57	\$0.00	\$68.85
	12/01/2022	\$43.18	\$9.10	\$17.57	\$0.00	\$69.85
	06/01/2023	\$44.18	\$9.10	\$17.57	\$0.00	\$70.85
	12/01/2023	\$45.43	\$9.10	\$17.57	\$0.00	\$72.10
This classification applies to the removal of standing trees, and the trimming and removal of branches and limbs when related to public works construction or site clearance incidental to construction. For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
	06/01/2022	\$42.43	\$9.10	\$17.57	\$0.00	\$69.10
	12/01/2022	\$43.43	\$9.10	\$17.57	\$0.00	\$70.10
	06/01/2023	\$44.43	\$9.10	\$17.57	\$0.00	\$71.10
	12/01/2023	\$45.68	\$9.10	\$17.57	\$0.00	\$72.35
For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 1 (HEAVY & HIGHWAY)</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	02/01/2022	\$43.69	\$11.39	\$20.37	\$0.00	\$75.45

Issue Date: 02/04/2022

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Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.85	\$11.39	\$20.37	\$0.00	\$53.61
2	60	\$26.21	\$11.39	\$20.37	\$0.00	\$57.97
3	70	\$30.58	\$11.39	\$20.37	\$0.00	\$62.34
4	80	\$34.95	\$11.39	\$20.37	\$0.00	\$66.71
5	90	\$39.32	\$11.39	\$20.37	\$0.00	\$71.08

Notes:

Apprentice to Journeyworker Ratio:1:3

MARBLE MASONS,TILELAYERS & TERRAZZO MECH <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	02/01/2022	\$57.17	\$11.39	\$22.31	\$0.00	\$90.87
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Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.59	\$11.39	\$22.31	\$0.00	\$62.29
2	60	\$34.30	\$11.39	\$22.31	\$0.00	\$68.00
3	70	\$40.02	\$11.39	\$22.31	\$0.00	\$73.72
4	80	\$45.74	\$11.39	\$22.31	\$0.00	\$79.44
5	90	\$51.45	\$11.39	\$22.31	\$0.00	\$85.15

Notes:

Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 1) <i>MILLWRIGHTS LOCAL 1121 - Zone 1</i>	01/03/2022	\$45.52	\$8.58	\$21.57	\$0.00	\$75.67
	01/02/2023	\$47.27	\$8.58	\$21.57	\$0.00	\$77.42

Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - MILLWRIGHT - Local 1121 Zone 1

Effective Date - 01/03/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$25.04	\$8.58	\$5.72	\$0.00	\$39.34
2	65	\$29.59	\$8.58	\$17.93	\$0.00	\$56.10
3	75	\$34.14	\$8.58	\$18.98	\$0.00	\$61.70
4	85	\$38.69	\$8.58	\$20.01	\$0.00	\$67.28

Effective Date - 01/02/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$26.00	\$8.58	\$5.72	\$0.00	\$40.30
2	65	\$30.73	\$8.58	\$17.93	\$0.00	\$57.24
3	75	\$35.45	\$8.58	\$18.98	\$0.00	\$63.01
4	85	\$40.18	\$8.58	\$20.01	\$0.00	\$68.77

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 LABORERS - ZONE 1	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
	06/01/2022	\$42.43	\$9.10	\$17.57	\$0.00	\$69.10
	12/01/2022	\$43.43	\$9.10	\$17.57	\$0.00	\$70.10
	06/01/2023	\$44.43	\$9.10	\$17.57	\$0.00	\$71.10
	12/01/2023	\$45.68	\$9.10	\$17.57	\$0.00	\$72.35

For apprentice rates see "Apprentice- LABORER"

OILER (OTHER THAN TRUCK CRANES,GRADALLS) OPERATING ENGINEERS LOCAL 4	12/01/2021	\$23.48	\$14.00	\$16.05	\$0.00	\$53.53
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OILER (TRUCK CRANES, GRADALLS) OPERATING ENGINEERS LOCAL 4	12/01/2021	\$28.44	\$14.00	\$16.05	\$0.00	\$58.49
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OTHER POWER DRIVEN EQUIPMENT - CLASS II OPERATING ENGINEERS LOCAL 4	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

PAINTER (BRIDGES/TANKS) PAINTERS LOCAL 35 - ZONE 2	01/01/2022	\$53.66	\$8.65	\$23.05	\$0.00	\$85.36
	07/01/2022	\$54.86	\$8.65	\$23.05	\$0.00	\$86.56
	01/01/2023	\$56.06	\$8.65	\$23.05	\$0.00	\$87.76
	07/01/2023	\$57.26	\$8.65	\$23.05	\$0.00	\$88.96
	01/01/2024	\$58.46	\$8.65	\$23.05	\$0.00	\$90.16
	07/01/2024	\$59.66	\$8.65	\$23.05	\$0.00	\$91.36
	01/01/2025	\$60.86	\$8.65	\$23.05	\$0.00	\$92.56

Issue Date: 02/04/2022

Wage Request Number: 20220204-018

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Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 01/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.83	\$8.65	\$0.00	\$0.00	\$35.48
2	55	\$29.51	\$8.65	\$6.27	\$0.00	\$44.43
3	60	\$32.20	\$8.65	\$6.84	\$0.00	\$47.69
4	65	\$34.88	\$8.65	\$7.41	\$0.00	\$50.94
5	70	\$37.56	\$8.65	\$19.63	\$0.00	\$65.84
6	75	\$40.25	\$8.65	\$20.20	\$0.00	\$69.10
7	80	\$42.93	\$8.65	\$20.77	\$0.00	\$72.35
8	90	\$48.29	\$8.65	\$21.91	\$0.00	\$78.85

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.43	\$8.65	\$0.00	\$0.00	\$36.08
2	55	\$30.17	\$8.65	\$6.27	\$0.00	\$45.09
3	60	\$32.92	\$8.65	\$6.84	\$0.00	\$48.41
4	65	\$35.66	\$8.65	\$7.41	\$0.00	\$51.72
5	70	\$38.40	\$8.65	\$19.63	\$0.00	\$66.68
6	75	\$41.15	\$8.65	\$20.20	\$0.00	\$70.00
7	80	\$43.89	\$8.65	\$20.77	\$0.00	\$73.31
8	90	\$49.37	\$8.65	\$21.91	\$0.00	\$79.93

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *	01/01/2022	\$44.56	\$8.65	\$23.05	\$0.00	\$76.26
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	07/01/2022	\$45.76	\$8.65	\$23.05	\$0.00	\$77.46
	01/01/2023	\$46.96	\$8.65	\$23.05	\$0.00	\$78.66
	07/01/2023	\$48.16	\$8.65	\$23.05	\$0.00	\$79.86
	01/01/2024	\$49.36	\$8.65	\$23.05	\$0.00	\$81.06
	07/01/2024	\$50.56	\$8.65	\$23.05	\$0.00	\$82.26
	01/01/2025	\$51.76	\$8.65	\$23.05	\$0.00	\$83.46

Issue Date: 02/04/2022

Wage Request Number: 20220204-018

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Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

Effective Date - 01/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.28	\$8.65	\$0.00	\$0.00	\$30.93
2	55	\$24.51	\$8.65	\$6.27	\$0.00	\$39.43
3	60	\$26.74	\$8.65	\$6.84	\$0.00	\$42.23
4	65	\$28.96	\$8.65	\$7.41	\$0.00	\$45.02
5	70	\$31.19	\$8.65	\$19.63	\$0.00	\$59.47
6	75	\$33.42	\$8.65	\$20.20	\$0.00	\$62.27
7	80	\$35.65	\$8.65	\$20.77	\$0.00	\$65.07
8	90	\$40.10	\$8.65	\$21.91	\$0.00	\$70.66

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.88	\$8.65	\$0.00	\$0.00	\$31.53
2	55	\$25.17	\$8.65	\$6.27	\$0.00	\$40.09
3	60	\$27.46	\$8.65	\$6.84	\$0.00	\$42.95
4	65	\$29.74	\$8.65	\$7.41	\$0.00	\$45.80
5	70	\$32.03	\$8.65	\$19.63	\$0.00	\$60.31
6	75	\$34.32	\$8.65	\$20.20	\$0.00	\$63.17
7	80	\$36.61	\$8.65	\$20.77	\$0.00	\$66.03
8	90	\$41.18	\$8.65	\$21.91	\$0.00	\$71.74

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT)	01/01/2022	\$42.62	\$8.65	\$23.05	\$0.00	\$74.32
PAINTERS LOCAL 35 - ZONE 2	07/01/2022	\$43.82	\$8.65	\$23.05	\$0.00	\$75.52
	01/01/2023	\$45.02	\$8.65	\$23.05	\$0.00	\$76.72
	07/01/2023	\$46.22	\$8.65	\$23.05	\$0.00	\$77.92
	01/01/2024	\$47.42	\$8.65	\$23.05	\$0.00	\$79.12
	07/01/2024	\$48.62	\$8.65	\$23.05	\$0.00	\$80.32
	01/01/2025	\$49.82	\$8.65	\$23.05	\$0.00	\$81.52

Issue Date: 02/04/2022

Wage Request Number: 20220204-018

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Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

Effective Date - 01/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.31	\$8.65	\$0.00	\$0.00	\$29.96
2	55	\$23.44	\$8.65	\$6.27	\$0.00	\$38.36
3	60	\$25.57	\$8.65	\$6.84	\$0.00	\$41.06
4	65	\$27.70	\$8.65	\$7.41	\$0.00	\$43.76
5	70	\$29.83	\$8.65	\$19.63	\$0.00	\$58.11
6	75	\$31.97	\$8.65	\$20.20	\$0.00	\$60.82
7	80	\$34.10	\$8.65	\$20.77	\$0.00	\$63.52
8	90	\$38.36	\$8.65	\$21.91	\$0.00	\$68.92

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.91	\$8.65	\$0.00	\$0.00	\$30.56
2	55	\$24.10	\$8.65	\$6.27	\$0.00	\$39.02
3	60	\$26.29	\$8.65	\$6.84	\$0.00	\$41.78
4	65	\$28.48	\$8.65	\$7.41	\$0.00	\$44.54
5	70	\$30.67	\$8.65	\$19.63	\$0.00	\$58.95
6	75	\$32.87	\$8.65	\$20.20	\$0.00	\$61.72
7	80	\$35.06	\$8.65	\$20.77	\$0.00	\$64.48
8	90	\$39.44	\$8.65	\$21.91	\$0.00	\$70.00

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

Painter / Taper (BRUSH, NEW) *	01/01/2022	\$43.16	\$8.65	\$23.05	\$0.00	\$74.86
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	07/01/2022	\$44.36	\$8.65	\$23.05	\$0.00	\$76.06
	01/01/2023	\$45.56	\$8.65	\$23.05	\$0.00	\$77.26
	07/01/2023	\$46.76	\$8.65	\$23.05	\$0.00	\$78.46
	01/01/2024	\$47.96	\$8.65	\$23.05	\$0.00	\$79.66
	07/01/2024	\$49.16	\$8.65	\$23.05	\$0.00	\$80.86
	01/01/2025	\$50.36	\$8.65	\$23.05	\$0.00	\$82.06

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW

Effective Date - 01/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.58	\$8.65	\$0.00	\$0.00	\$30.23
2	55	\$23.74	\$8.65	\$6.27	\$0.00	\$38.66
3	60	\$25.90	\$8.65	\$6.84	\$0.00	\$41.39
4	65	\$28.05	\$8.65	\$7.41	\$0.00	\$44.11
5	70	\$30.21	\$8.65	\$19.63	\$0.00	\$58.49
6	75	\$32.37	\$8.65	\$20.20	\$0.00	\$61.22
7	80	\$34.53	\$8.65	\$20.77	\$0.00	\$63.95
8	90	\$38.84	\$8.65	\$21.91	\$0.00	\$69.40

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.18	\$8.65	\$0.00	\$0.00	\$30.83
2	55	\$24.40	\$8.65	\$6.27	\$0.00	\$39.32
3	60	\$26.62	\$8.65	\$6.84	\$0.00	\$42.11
4	65	\$28.83	\$8.65	\$7.41	\$0.00	\$44.89
5	70	\$31.05	\$8.65	\$19.63	\$0.00	\$59.33
6	75	\$33.27	\$8.65	\$20.20	\$0.00	\$62.12
7	80	\$35.49	\$8.65	\$20.77	\$0.00	\$64.91
8	90	\$39.92	\$8.65	\$21.91	\$0.00	\$70.48

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)	01/01/2022	\$41.22	\$8.65	\$23.05	\$0.00	\$72.92
PAINTERS LOCAL 35 - ZONE 2	07/01/2022	\$42.42	\$8.65	\$23.05	\$0.00	\$74.12
	01/01/2023	\$43.62	\$8.65	\$23.05	\$0.00	\$75.32
	07/01/2023	\$44.82	\$8.65	\$23.05	\$0.00	\$76.52
	01/01/2024	\$46.02	\$8.65	\$23.05	\$0.00	\$77.72
	07/01/2024	\$47.22	\$8.65	\$23.05	\$0.00	\$78.92
	01/01/2025	\$48.42	\$8.65	\$23.05	\$0.00	\$80.12

Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT

Effective Date - 01/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.61	\$8.65	\$0.00	\$0.00	\$29.26
2	55	\$22.67	\$8.65	\$6.27	\$0.00	\$37.59
3	60	\$24.73	\$8.65	\$6.84	\$0.00	\$40.22
4	65	\$26.79	\$8.65	\$7.41	\$0.00	\$42.85
5	70	\$28.85	\$8.65	\$19.63	\$0.00	\$57.13
6	75	\$30.92	\$8.65	\$20.20	\$0.00	\$59.77
7	80	\$32.98	\$8.65	\$20.77	\$0.00	\$62.40
8	90	\$37.10	\$8.65	\$21.91	\$0.00	\$67.66

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.21	\$8.65	\$0.00	\$0.00	\$29.86
2	55	\$23.33	\$8.65	\$6.27	\$0.00	\$38.25
3	60	\$25.45	\$8.65	\$6.84	\$0.00	\$40.94
4	65	\$27.57	\$8.65	\$7.41	\$0.00	\$43.63
5	70	\$29.69	\$8.65	\$19.63	\$0.00	\$57.97
6	75	\$31.82	\$8.65	\$20.20	\$0.00	\$60.67
7	80	\$33.94	\$8.65	\$20.77	\$0.00	\$63.36
8	90	\$38.18	\$8.65	\$21.91	\$0.00	\$68.74

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY) <i>LABORERS - ZONE 1 (HEAVY & HIGHWAY)</i>	12/01/2021	\$41.18	\$9.10	\$17.57	\$0.00	\$67.85
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
PANEL & PICKUP TRUCKS DRIVER <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2021	\$36.88	\$13.41	\$16.01	\$0.00	\$66.30
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59
For apprentice rates see "Apprentice- PILE DRIVER"						
PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59

Issue Date: 02/04/2022

Wage Request Number: 20220204-018

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Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PILE DRIVER - Local 56 Zone 1

Effective Date - 08/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.54	\$9.40	\$23.12	\$0.00	\$57.06
2	60	\$29.44	\$9.40	\$23.12	\$0.00	\$61.96
3	70	\$34.35	\$9.40	\$23.12	\$0.00	\$66.87
4	75	\$36.80	\$9.40	\$23.12	\$0.00	\$69.32
5	80	\$39.26	\$9.40	\$23.12	\$0.00	\$71.78
6	80	\$39.26	\$9.40	\$23.12	\$0.00	\$71.78
7	90	\$44.16	\$9.40	\$23.12	\$0.00	\$76.68
8	90	\$44.16	\$9.40	\$23.12	\$0.00	\$76.68

Notes:
 % Indentured After 10/1/17; 45/45/55/55/70/70/80/80
 Step 1&2 \$34.01/ 3&4 \$41.46/ 5&6 \$62.80/ 7&8 \$69.25

Apprentice to Journeyworker Ratio:1:5

PIPEFITTER & STEAMFITTER <i>PIPEFITTERS LOCAL 537</i>	03/01/2021	\$57.94	\$11.70	\$20.24	\$0.00	\$89.88
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Apprentice - PIPEFITTER - Local 537

Effective Date - 03/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$23.18	\$11.70	\$8.25	\$0.00	\$43.13
2	45	\$26.07	\$11.70	\$20.24	\$0.00	\$58.01
3	60	\$34.76	\$11.70	\$20.24	\$0.00	\$66.70
4	70	\$40.56	\$11.70	\$20.24	\$0.00	\$72.50
5	80	\$46.35	\$11.70	\$20.24	\$0.00	\$78.29

Notes:
 ** 1:3; 3:15; 1:10 thereafter / Steps are 1 yr.
 Refrig/AC Mechanic **1:1;1:2;2:4;3:6;4:8;5:10;6:12;7:14;8:17;9:20;10:23(Max)

Apprentice to Journeyworker Ratio:**

PIPELAYER <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
	06/01/2022	\$42.43	\$9.10	\$17.57	\$0.00	\$69.10
	12/01/2022	\$43.43	\$9.10	\$17.57	\$0.00	\$70.10
	06/01/2023	\$44.43	\$9.10	\$17.57	\$0.00	\$71.10
	12/01/2023	\$45.68	\$9.10	\$17.57	\$0.00	\$72.35

For apprentice rates see "Apprentice- LABORER"

PIPELAYER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 1 (HEAVY & HIGHWAY)</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
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For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PLUMBERS & GASFITTERS <i>PLUMBERS & GASFITTERS LOCAL 12</i>	09/01/2021	\$61.79	\$13.57	\$17.26	\$0.00	\$92.62
	02/27/2022	\$63.39	\$13.57	\$17.26	\$0.00	\$94.22
	09/04/2022	\$65.09	\$13.57	\$17.26	\$0.00	\$95.92
	02/26/2023	\$66.79	\$13.57	\$17.26	\$0.00	\$97.62
	09/03/2023	\$68.54	\$13.57	\$17.26	\$0.00	\$99.37
	03/03/2024	\$70.34	\$13.57	\$17.26	\$0.00	\$101.17
	09/01/2024	\$72.14	\$13.57	\$17.26	\$0.00	\$102.97
	03/02/2025	\$73.94	\$13.57	\$17.26	\$0.00	\$104.77

Apprentice - PLUMBER/GASFITTER - Local 12

Effective Date - 09/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$21.63	\$13.57	\$6.24	\$0.00	\$41.44
2	40	\$24.72	\$13.57	\$7.08	\$0.00	\$45.37
3	55	\$33.98	\$13.57	\$9.63	\$0.00	\$57.18
4	65	\$40.16	\$13.57	\$11.33	\$0.00	\$65.06
5	75	\$46.34	\$13.57	\$13.03	\$0.00	\$72.94

Effective Date - 02/27/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$22.19	\$13.57	\$6.24	\$0.00	\$42.00
2	40	\$25.36	\$13.57	\$7.08	\$0.00	\$46.01
3	55	\$34.86	\$13.57	\$9.63	\$0.00	\$58.06
4	65	\$41.20	\$13.57	\$11.33	\$0.00	\$66.10
5	75	\$47.54	\$13.57	\$13.03	\$0.00	\$74.14

Notes:

** 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr
Step4 with lic\$69.00, Step5 with lic\$76.87

Apprentice to Journeyworker Ratio: **

PNEUMATIC CONTROLS (TEMP.) <i>PIPEFITTERS LOCAL 537</i>	03/01/2021	\$57.94	\$11.70	\$20.24	\$0.00	\$89.88
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
	06/01/2022	\$42.43	\$9.10	\$17.57	\$0.00	\$69.10
	12/01/2022	\$43.43	\$9.10	\$17.57	\$0.00	\$70.10
	06/01/2023	\$44.43	\$9.10	\$17.57	\$0.00	\$71.10
	12/01/2023	\$45.68	\$9.10	\$17.57	\$0.00	\$72.35
For apprentice rates see "Apprentice- LABORER"						
PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 1 (HEAVY & HIGHWAY)</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
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 1</i>	12/01/2021	\$42.18	\$9.10	\$17.57	\$0.00	\$68.85
	06/01/2022	\$43.18	\$9.10	\$17.57	\$0.00	\$69.85
	12/01/2022	\$44.18	\$9.10	\$17.57	\$0.00	\$70.85
	06/01/2023	\$45.18	\$9.10	\$17.57	\$0.00	\$71.85
	12/01/2023	\$46.43	\$9.10	\$17.57	\$0.00	\$73.10
For apprentice rates see "Apprentice- LABORER"						
POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 1 (HEAVY & HIGHWAY)</i>	12/01/2021	\$42.18	\$9.10	\$17.57	\$0.00	\$68.85
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$51.38	\$14.00	\$16.05	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$51.38	\$14.00	\$16.05	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$33.69	\$14.00	\$16.05	\$0.00	\$63.74
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 170 - Rosenfeld (Walpole)</i>	01/01/2022	\$25.00	\$11.96	\$8.00	\$0.00	\$44.96
	05/01/2022	\$25.75	\$11.96	\$8.00	\$0.00	\$45.71
	01/01/2023	\$25.75	\$12.46	\$8.00	\$0.00	\$46.21
	05/01/2023	\$26.40	\$12.46	\$8.00	\$0.00	\$46.86
	01/01/2024	\$26.40	\$12.96	\$8.00	\$0.00	\$47.36
	05/01/2024	\$27.00	\$12.96	\$8.00	\$0.00	\$47.96
	01/01/2025	\$27.00	\$13.46	\$8.00	\$0.00	\$48.46
	05/01/2025	\$27.60	\$13.46	\$8.25	\$0.00	\$49.31
	01/01/2026	\$27.60	\$13.96	\$8.25	\$0.00	\$49.81
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
	06/01/2022	\$42.43	\$9.10	\$17.57	\$0.00	\$69.10
	12/01/2022	\$43.43	\$9.10	\$17.57	\$0.00	\$70.10
	06/01/2023	\$44.43	\$9.10	\$17.57	\$0.00	\$71.10
	12/01/2023	\$45.68	\$9.10	\$17.57	\$0.00	\$72.35
For apprentice rates see "Apprentice- LABORER"						
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROOFER (Inc. Roofer Waterproofing & Roofer Dampproofg) <i>ROOFERS LOCAL 33</i>	02/01/2022	\$47.03	\$12.28	\$19.45	\$0.00	\$78.76

Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - ROOFER - Local 33

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.52	\$12.28	\$5.21	\$0.00	\$41.01
2	60	\$28.22	\$12.28	\$19.45	\$0.00	\$59.95
3	65	\$30.57	\$12.28	\$19.45	\$0.00	\$62.30
4	75	\$35.27	\$12.28	\$19.45	\$0.00	\$67.00
5	85	\$39.98	\$12.28	\$19.45	\$0.00	\$71.71

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

Apprentice to Journeyworker Ratio:**

ROOFER SLATE / TILE / PRECAST CONCRETE ROOFERS LOCAL 33	02/01/2022	\$47.28	\$12.28	\$19.45	\$0.00	\$79.01
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For apprentice rates see "Apprentice- ROOFER"

SHEETMETAL WORKER SHEETMETAL WORKERS LOCAL 17 - A	02/01/2022	\$53.70	\$13.80	\$25.60	\$2.79	\$95.89
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Apprentice - SHEET METAL WORKER - Local 17-A

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	42	\$22.55	\$13.80	\$6.01	\$0.00	\$42.36
2	42	\$22.55	\$13.80	\$6.01	\$0.00	\$42.36
3	47	\$25.24	\$13.80	\$11.26	\$1.51	\$51.81
4	47	\$25.24	\$13.80	\$11.26	\$1.51	\$51.81
5	52	\$27.92	\$13.80	\$12.23	\$1.62	\$55.57
6	52	\$27.92	\$13.80	\$12.48	\$1.63	\$55.83
7	60	\$32.22	\$13.80	\$13.87	\$1.80	\$61.69
8	65	\$34.91	\$13.80	\$14.84	\$1.91	\$65.46
9	75	\$40.28	\$13.80	\$16.77	\$2.13	\$72.98
10	85	\$45.65	\$13.80	\$18.20	\$2.33	\$79.98

Notes:
Steps are 6 mos.

Apprentice to Journeyworker Ratio:1:4

SPECIALIZED EARTH MOVING EQUIP < 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 ZONE A	12/01/2021	\$37.34	\$13.41	\$16.01	\$0.00	\$66.76
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SPECIALIZED EARTH MOVING EQUIP > 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 ZONE A	12/01/2021	\$37.63	\$13.41	\$16.01	\$0.00	\$67.05
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SPRINKLER FITTER SPRINKLER FITTERS LOCAL 550 - (Section A) Zone 1	03/01/2021	\$62.45	\$10.00	\$21.25	\$0.00	\$93.70
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Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - TELECOMMUNICATION TECHNICIAN - Local 103

Effective Date - 09/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$19.53	\$13.00	\$0.59	\$0.00	\$33.12
2	45	\$19.53	\$13.00	\$0.59	\$0.00	\$33.12
3	50	\$21.70	\$13.00	\$14.75	\$0.00	\$49.45
4	50	\$21.70	\$13.00	\$14.75	\$0.00	\$49.45
5	55	\$23.87	\$13.00	\$15.12	\$0.00	\$51.99
6	60	\$26.04	\$13.00	\$15.47	\$0.00	\$54.51
7	65	\$28.21	\$13.00	\$15.84	\$0.00	\$57.05
8	70	\$30.38	\$13.00	\$16.20	\$0.00	\$59.58
9	75	\$32.55	\$13.00	\$16.57	\$0.00	\$62.12
10	80	\$34.72	\$13.00	\$16.92	\$0.00	\$64.64

Effective Date - 03/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$20.12	\$13.00	\$0.60	\$0.00	\$33.72
2	45	\$20.12	\$13.00	\$0.60	\$0.00	\$33.72
3	50	\$22.36	\$13.00	\$15.02	\$0.00	\$50.38
4	50	\$22.36	\$13.00	\$15.02	\$0.00	\$50.38
5	55	\$24.59	\$13.00	\$15.39	\$0.00	\$52.98
6	60	\$26.83	\$13.00	\$15.74	\$0.00	\$55.57
7	65	\$29.06	\$13.00	\$16.11	\$0.00	\$58.17
8	70	\$31.30	\$13.00	\$16.48	\$0.00	\$60.78
9	75	\$33.53	\$13.00	\$16.85	\$0.00	\$63.38
10	80	\$35.77	\$13.00	\$17.20	\$0.00	\$65.97

Notes:

Apprentice to Journeyworker Ratio:1:1

TERRAZZO FINISHERS BRICKLAYERS LOCAL 3 - MARBLE & TILE	02/01/2022	\$56.09	\$11.39	\$22.34	\$0.00	\$89.82
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Classification Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.05	\$11.39	\$22.34	\$0.00	\$61.78
2	60	\$33.65	\$11.39	\$22.34	\$0.00	\$67.38
3	70	\$39.26	\$11.39	\$22.34	\$0.00	\$72.99
4	80	\$44.87	\$11.39	\$22.34	\$0.00	\$78.60
5	90	\$50.48	\$11.39	\$22.34	\$0.00	\$84.21

Notes:

Apprentice to Journeyworker Ratio:1:3

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$42.58	\$9.10	\$17.72	\$0.00	\$69.40
For apprentice rates see "Apprentice- LABORER"						
TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$41.30	\$9.10	\$17.72	\$0.00	\$68.12
For apprentice rates see "Apprentice- LABORER"						
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$41.18	\$9.10	\$17.72	\$0.00	\$68.00
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2021	\$37.92	\$13.41	\$16.01	\$0.00	\$67.34
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2021	\$53.41	\$9.10	\$18.17	\$0.00	\$80.68
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2021	\$55.41	\$9.10	\$18.17	\$0.00	\$82.68
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2021	\$45.48	\$9.10	\$18.17	\$0.00	\$72.75
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2021	\$47.48	\$9.10	\$18.17	\$0.00	\$74.75
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2021	\$37.34	\$13.41	\$16.01	\$0.00	\$66.76
WAGON DRILL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
	06/01/2022	\$42.43	\$9.10	\$17.57	\$0.00	\$69.10
	12/01/2022	\$43.43	\$9.10	\$17.57	\$0.00	\$70.10
	06/01/2023	\$44.43	\$9.10	\$17.57	\$0.00	\$71.10
	12/01/2023	\$45.68	\$9.10	\$17.57	\$0.00	\$72.35
For apprentice rates see "Apprentice- LABORER"						

Issue Date: 02/04/2022

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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
WAGON DRILL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 1 (HEAVY & HIGHWAY)</i>	12/01/2021	\$41.43	\$9.10	\$17.57	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$51.38	\$14.00	\$16.05	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS & GASFITTERS LOCAL 12</i>	09/01/2021	\$61.79	\$13.57	\$17.26	\$0.00	\$92.62
	02/27/2022	\$63.39	\$13.57	\$17.26	\$0.00	\$94.22
	09/04/2022	\$65.09	\$13.57	\$17.26	\$0.00	\$95.92
	02/26/2023	\$66.79	\$13.57	\$17.26	\$0.00	\$97.62
	09/03/2023	\$68.54	\$13.57	\$17.26	\$0.00	\$99.37
	03/03/2024	\$70.34	\$13.57	\$17.26	\$0.00	\$101.17
	09/01/2024	\$72.14	\$13.57	\$17.26	\$0.00	\$102.97
	03/02/2025	\$73.94	\$13.57	\$17.26	\$0.00	\$104.77
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 Apprentices Information:

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

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

All steps are six months (1000 hours.)

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

** Multiple ratios are listed in the comment field.

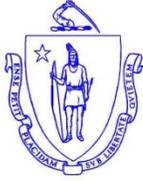
*** APP to JM; 1:1, 2:2, 2:3, 3:4, 4:4, 4:5, 4:6, 5:7, 6:7, 6:8, 6:9, 7:10, 8:10, 8:11, 8:12, 9:13, 10:13, 10:14, etc.

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

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THE COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF LABOR
DIVISION OF OCCUPATIONAL SAFETY
PREVAILING WAGE PROGRAM
www.mass.gov/dos/pw

NOTICE: TO AWARDING AUTHORITIES AND CONTRACTORS

ISSUED: SEPTEMBER 1, 2006

DRIVERS WHO HAUL BITUMINOUS CONCRETE (ASPHALT)

The Massachusetts Supreme Judicial Court recently affirmed that drivers who haul bituminous concrete to public construction projects are not covered by the Prevailing Wage Law while off-site, including time spent over-the-road and picking-up materials. These drivers are covered by the Prevailing Wage Law only while on-site at the public construction project.

In Teamsters Joint Council No. 10 v. Department of Labor, et al., 447 Mass. 100 (2006), the SJC upheld a 2001 administrative decision limiting the applicability of prevailing wage rates to the time bituminous drivers spend at the public construction site. This most recent decision of the SJC followed a 1989 ruling that had upheld an earlier Department of Labor (and Industries') policy that had deemed this category of drivers to be "teamsters" under the Law and, therefore, entitled to prevailing wage rates. See Construction Industries of Massachusetts v. Commissioner of Labor and Industries, 406 Mass. 162 (1989). However, the earlier court case had left open the question of whether this entitled these bituminous drivers to prevailing wage rates for their over-the-road time as well as their on-site time. This most recent decision has now answered that question.

All of the requirements of the Prevailing Wage Law, including certified weekly payroll requirements, apply to bituminous drivers for all time spent at the public construction site.

DRIVERS WHO HAUL READY-MIX CONCRETE (CEMENT)

Drivers who haul ready-mix concrete to public construction projects are not covered by the Prevailing Wage Law while off-site, including time spent over-the-road and picking-up materials. These drivers are covered by the Prevailing Wage Law while on-site at the public construction project. This applicability determination was established by a 2001 administrative decision of the Department of Labor's Division of Occupational Safety.

All of the requirements of the Prevailing Wage Law, including certified weekly payroll requirements, apply to ready-mix drivers for all time spent at the public construction site.

Please feel free to contact the Division of Occupational Safety at 617-626-6953 if you have any questions. Questions about enforcement of the Prevailing Wage Law may be directed to the Attorney General's Fair Labor and Business Practices Division at 617-727-3465

The Massachusetts Prevailing Wage Law
M.G.L. ch. 149, §§ 26 – 27

NOTICE TO AWARDING AUTHORITIES

- The enclosed wage schedule applies only to the specific project listed at the top and will be updated for any public construction project lasting longer than one (1) year.
- You should request an updated wage schedule from the Division of Occupational Safety if you have not opened bids or selected a contractor within 90 days of the date of issuance of the enclosed wage schedule.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project for which it has been issued.
- Once a contractor has been selected by the awarding authority, the wage schedule shall be made a part of the contract for that project.

NOTICE TO CONTRACTORS

- The enclosed wage schedule, and any updated schedule, must be posted in a conspicuous place at the work site during the life of the project.
- The wages listed on the enclosed wage schedule must be paid to employees on public works projects regardless of whether they are employed by the prime contractor, a filed sub-bidder, or any sub-contractor.
- The enclosed wage schedule applies to all phases of the project, including the final clean up. Contractors whose only role is to perform final clean up must pay their employees according to this wage schedule.
- All apprentices must be registered with the Massachusetts Division of Apprentice Training in order to be paid at the reduced apprentice rates. If a worker is not registered with the Division of Apprentice Training, they must be paid the “total rate” listed on the wage schedule regardless of experience or skill level. For further information, please call (617) 727-3486 or write to the Division of Apprentice Training, 399 Washington Street, 4th Floor, Boston, MA 02108

**WEEKLY PAYROLL RECORDS REPORT
& STATEMENT OF COMPLIANCE**

In accordance with Massachusetts General Law c149, §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 has been printed on the reverse of this page 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.

In addition, every contractor and subcontractor is required to submit a copy of their weekly payroll records to the awarding authority. This is required to be done on a weekly basis. Once collected, the awarding authority is also required to preserve those records for three years.

In addition, each such contractor, subcontractor or public body shall furnish to the Department of Labor & Workforce Development/Division of Occupational Safety within fifteen days after completion of its portion of the work a statement, executed by the contractor, subcontractor, or public body who supervises the payment of wages, in the following form:

STATEMENT OF COMPLIANCE

_____, 2022

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 _____

DIVISION OF OCCUPATIONAL SAFETY, 399 WASHINGTON STREET, 5TH FL., BOSTON, MA. 02108

ITEM SHEETS

The Contractor shall insert unit prices for each item in ink, in both words and figures, and is to show a total bid price (unit price × estimated quantities). In the event of a discrepancy between the written words and figures, the written words shall govern. In the event of an error in the bidder's total bid price, the corrected total bid obtained by the summation of the products of the unit prices multiplied by the respective quantities shall stand as the bidder's total bid price.

The Contractor is required to review any related plans, conduct a full site review, and read all the provisions in the document before inserting prices and is further advised to make his own determination as to the accuracy of the estimated quantities before inserting bid prices.

Unbalanced bidding is expressly prohibited, and all unit bid prices will be compared for reasonable conformance with the engineer's estimate. The City has the right to reject award of a bid, or part thereof, to protect the public interest if it is apparent that a bid is mathematically unbalanced, the bidder front-ends its bid as to amount to an advanced payment, there are extreme variations from the engineer's estimate or other bids received, if in the opinion of the City, the unit prices create a reasonable doubt that that apparent low bidder will actually result in the lowest cost to the Department, and/or if the overall competitive bidding process has been jeopardized.

***The estimated quantities shown here are based solely upon a reasonable assessment of the project parameters; thus, the Contractor is advised that the actual quantities may vary substantially as field conditions may necessitate. Regardless of the amount of actual quantities, however, the quoted unit prices shall always apply.**

There is no separate labor charge under this bid: unit prices shall include full compensation for all labor, materials, tools and equipment, and all incidentals necessary to complete the work as specified herein.

NOTICE: In accordance with MGL Chapter 303 of the Acts of 2008, this bid contains price adjustments for 1) Fuel (combination of Gasoline & Diesel), 2) Liquid Asphalt, and 3) Portland Cement. It is the bidders' responsibility to familiarize themselves with this price adjustment program prior to entering a bid.

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
<p>ITEM 0.303DFC-A: DIFFERENTIAL FUEL COSTS FOR ASPHALT</p> <ul style="list-style-type: none"> Bidders may elect NOT to utilize the cost of fuel(s) separately by inserting the term N/A (i.e., Not Applicable) in the following space for this item. This is a mandatory requirement to verify that the Contractor has waived their option to bid the cost of fuel(s) separately and has instead elected to factor their fuel costs into the respective bid price for that item. To waive the utilization of the cost of fuel(s), write N/A here: _____ The City of Newton reserves the right to validate the Contractor's fuel consumption information before and after awarding the bid. ----- <p>0.303DFC-A= total combined number of gallons of Fuel (Diesel & Gasoline) to install One Ton of Asphalt:</p> <p>Fuel Factors:</p> <ul style="list-style-type: none"> Diesel = 2.9 gal/ton Gasoline = does not apply <p>(IN WORDS) _____ Gallons Per Ton</p> <p>(IN FIGURES) _____ Gallons Per Ton</p> <p>(_____ Gallons) x (Base Price per MassDOT) \$3.086/\$2.731 (diesel/gasoline) = Fuel cost per ton Base Price of fuel (BPF) per MassDOT January 2022 price</p>	N/A	TON	<p>The Base Price of Fuel (BPF) shall be used to determine the monthly price differential. (See Spec. Prov.)</p> <p>\$ <u> N/A </u></p>

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
<p>ITEM 0.303DFC-EXB: DIFFERENTIAL FUEL COSTS FOR EXCAVATION AND BACKFILL</p> <ul style="list-style-type: none"> Bidders may elect NOT to utilize the cost of fuel(s) separately by inserting the term N/A (i.e. Not Applicable) in the following space for this item. This is a mandatory requirement to verify the Contractor has waived their option to bid the cost of fuel(s) separately and has instead elected to factor their fuel costs into the respective bid price for that item. To waive the utilization of the cost of fuel(s) write N/A here: _____ The City of Newton reserves the right to validate the Contractor's fuel consumption information before and after awarding the bid. <p>-----</p> <p>0.303DFC-A= total combined number of gallons of Fuel (Diesel & Gasoline) to install One Ton of Asphalt:</p> <p>Fuel Factors:</p> <ul style="list-style-type: none"> Diesel = 0.29 GAL/CY Gasoline = 0.15 GAL/CY <p>(IN WORDS) _____ Gallons Per Ton</p> <p>(IN FIGURES) _____ Gallons Per Ton</p> <p>(_____ Gallons x (Base Price (per MassDOT) \$3.086/\$2.731 (diesel/gasoline) = Fuel cost per ton Base Price of fuel (BPF)Per MassDOT January 2022 price</p>	N/A	CY	<p>The Base Price (BPF) shall be used to determine the monthly price differential. (See Spec. Prov.)</p> <p>\$ <u> N/A </u></p>
<p>ITEM 0.303DLA-A: DIFFERENTIAL FOR LIQUID ASPHALT</p> <ul style="list-style-type: none"> Bidders may elect NOT to utilize the cost of fuel(s) separately by inserting the term N/A (i.e. Not Applicable) in the following space for this item. This is a mandatory requirement to verify the Contractor has waived their option to bid the cost of fuel(s) separately and has instead elected to factor their fuel costs into the respective bid price for that item. To waive the utilization of the cost of fuel(s) write N/A here: _____ The City of Newton reserves the right to validate the Contractor's fuel consumption information before and after awarding the bid. <p>(Note: The percentage of Liquid Asphalt used for <u>One (1) Ton of Asphalt</u> shall be determined by the Contractor's mix formula submittal)</p> <p>The Base Price for Liquid Asphalt is:</p> <p>\$ <u> 625.00 </u> PER TON OF LIQUID ASPHALT Base Price of Liquid Asphalt (BPLA)Per MassDOT January 2022 price</p>	N/A	TON	<p>The Base Price (BPLA) shall be used to determine the monthly price differential. (See Spec. Prov.)</p> <p>\$ <u> N/A </u></p>

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
<p>ITEM 0.303DPC-C: DIFFERENTIAL FOR PORTLAND CEMENT CONCRETE</p> <ul style="list-style-type: none"> Bidders may elect NOT to utilize the cost of fuel(s) separately by inserting the term N/A (i.e. Not Applicable) in the following space for this item. This is a mandatory requirement to verify the Contractor has waived their option to bid the cost of fuel(s) separately and has instead elected to factor their fuel costs into the respective bid price for that item. To waive the utilization of the cost of fuel(s) write N/A here: _____ <p>The Base Price for Portland Cement Concrete is:</p> <p>\$ <u>162.28</u> PER CUBIC YARD OF PORTLAND CEMENT CONCRETE <i>Base Price of Portland Cement (BPPC) Per MassDOT January 2022 price</i></p>	N/A	CY	<p>The Base Price (BPPCC) shall be used to determine the monthly price differential. (See Spec. Prov.)</p> <p>\$ <u>N/A</u></p>
<p>ITEM 102.1: TREE TRIMMING</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER FOOT</p>	500	FT	\$ _____
<p>ITEM 102.511: TREE PROTECTION ARMORING AND PRUNING</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	14	EA	\$ _____
<p>ITEM 102.521: TREE AND PLANT PROTECTION FENCE</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER FOOT</p>	200	FT	\$ _____
<p>ITEM 120.1: UNCLASSIFIED EXCAVATION</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER CUBIC YARD</p>	1,780	CY	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
<p>ITEM 141.1: TEST PIT FOR EXPLORATION</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER CUBIC YARD</p>	10	CY	\$ _____
<p>ITEM 146: DRAINAGE STRUCTURE REMOVED</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	9	EA	\$ _____
<p>ITEM 151.: GRAVEL BORROW</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER CUBIC YARD</p>	110	CY	\$ _____
<p>ITEM 151.2: GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER CUBIC YARD</p>	300	CY	\$ _____
<p>ITEM 156.: CRUSHED STONE</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER TON</p>	280	TON	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
<p>ITEM 158.: TEMPORARY ACCESS DRIVE</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER SQUARE YARD</p>	140	SY	\$ _____
<p>ITEM 170.: FINE GRADING AND COMPACTING – SUBGRADE AREA</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER SQUARE YARD</p>	9,300	SY	\$ _____
<p>ITEM 201.: CATCH BASIN</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	9	EA	\$ _____
<p>ITEM 202.: MANHOLE</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	4	EA	\$ _____
<p>ITEM 203.: MANHOLE (6 FOOT DIAMETER)</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	2	EA	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
<p>ITEM 220.: DRAINAGE STRUCTURE ADJUSTED</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	1	EA	\$ _____
<p>ITEM 220.2: DRAINAGE STRUCTURE REBUILT</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER FOOT</p>	1	FT	\$ _____
<p>ITEM 220.6: SANITARY STRUCTURE REBUILT</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER FOOT</p>	4	FT	\$ _____
<p>ITEM 220.7: SANITARY STRUCTURE ADJUSTED</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	4	EA	\$ _____
<p>ITEM 222.3: FRAME AND GRATE (OR COVER) MUNICIPAL STANDARD</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	20	EA	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
<p>ITEM 223.1: FRAME AND GRATE (OR COVER) REMOVED AND STACKED</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	9	EA	\$ _____
<p>ITEM 251.041: 4 INCH PERFORATED HIGH-DENSITY POLYETHYLENE PIPE (HDPE)</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER FOOT</p>	590	FT	\$ _____
<p>ITEM 251.06: 6 INCH HIGH-DENSITY POLYETHYLENE PIPE (HDPE)</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER FOOT</p>	170	FT	\$ _____
<p>ITEM 251.118: 18 INCH HIGH-DENSITY POLYETHYLENE PIPE (HDPE) FLARED END</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	1	EA	\$ _____
<p>ITEM 251.121: 12 INCH PERFORATED HIGH-DENSITY POLYETHYLENE PIPE (HDPE)</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER FOOT</p>	710	FT	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
<p>ITEM 251.18: 18 INCH HIGH-DENSITY POLYETHYLENE PIPE (HDPE)</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER FOOT</p>	30	FT	\$ _____
<p>ITEM 258.: STONE FOR PIPE ENDS</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER SQUARE YARD</p>	10	SY	\$ _____
<p>ITEM 358.: GATE BOX ADJUSTED</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	1	EA	\$ _____
<p>ITEM 403.: RECLAIMED PAVEMENT FOR BASE COURSE AND/OR SUB-BASE</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER SQUARE YARD</p>	7,960	SY	\$ _____
<p>ITEM 440.: CALCIUM CHLORIDE FOR ROADWAY DUST CONTROL</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER POUND</p>	1,940	LB	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
ITEM 450.23: SUPERPAVE SURFACE COURSE – 12.5 (SSC – 12.5) THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER _____ TON	860	TON	\$ _____
ITEM 450.31: SUPERPAVE INTERMEDIATE COURSE – 12.5 (SIC – 12.5) THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER _____ TON	1,070	TON	\$ _____
ITEM 461.: POROUS PAVEMENT THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER _____ SQUARE FOOT	10,600	SF	\$ _____
ITEM 472.: TEMPORARY ASPHALT PATCHING THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER _____ TON	290	TON	\$ _____
ITEM 504.: GRANITE CURB TYPE VA4 - STRAIGHT THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER _____ FOOT	1,870	FT	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
ITEM 504.1: GRANITE CURB TYPE VA4 - CURVED THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER FOOT	380	FT	\$ _____
ITEM 509.: GRANITE TRANSITION CURB FOR PEDESTRIAN CURB RAMPS - STRAIGHT THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER FOOT	130	FT	\$ _____
ITEM 509.1: GRANITE TRANSITION CURB FOR PEDESTRIAN CURB RAMPS - CURVED THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER FOOT	70	FT	\$ _____
ITEM 580.: CURB REMOVED AND RESET THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER FOOT	860	FT	\$ _____
ITEM 594.: CURB REMOVED AND DISCARDED THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER FOOT	400	FT	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
ITEM 657.: TEMPORARY CONSTRUCTION FENCE THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER FOOT	400	FT	\$ _____
ITEM 697.: SEDIMENTATION FENCE THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER FOOT	1,210	FT	\$ _____
ITEM 697.1: SILT SACK THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER EACH	9	EA	\$ _____
ITEM 697.3: SEDIMENTATION BARRIER THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER FOOT	1,210	FT	\$ _____
ITEM 701.: CEMENT CONCRETE SIDEWALK THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER SQUARE YARD	320	SY	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
ITEM 701.1: CEMENT CONCRETE SIDEWALK AT DRIVEWAYS THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER SQUARE YARD	30	SY	\$ _____
ITEM 701.2: CEMENT CONCRETE PEDESTRIAN CURB RAMP THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER SQUARE YARD	110	SY	\$ _____
ITEM 707.8: STEEL BOLLARD THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER EACH	17	EA	\$ _____
ITEM 708.: STEEL BOLLARD REMOVED AND RESET THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER EACH	8	EA	\$ _____
ITEM 748.: MOBILIZATION THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER LUMP SUM	1	LS	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
<p>ITEM 751.: LOAM BORROW</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER CUBIC YARD</p>	60	CY	\$ _____
<p>ITEM 756.: NPDES STORMWATER POLLUTION PREVENTION PLAN</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER LUMP SUM</p>	1	LS	\$ _____
<p>ITEM 765.: SEEDING</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER SQUARE YARD</p>	490	SY	\$ _____
<p>ITEM 767.6: AGED PINE BARK MULCH</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER CUBIC YARD</p>	85	CY	\$ _____
<p>ITEM 799.: LANDSCAPING</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER LUMP SUM</p>	1	LS	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
<p>ITEM 804.15: 1 ½ INCH ELECTRICAL CONDUIT TYPE NM – PLASTIC – (UL)</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER FOOT</p>	1,500	FT	\$ _____
<p>ITEM 811.27: ELECTRIC HANDHOLE (MUNICIPAL STANDARD)</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	18	EA	\$ _____
<p>ITEM 811.37: ELECTRIC HANDHOLE ADJUSTED</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	2	EA	\$ _____
<p>ITEM 812.09: LIGHT STANDARD FOUNDATION PRECAST</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	18	EA	\$ _____
<p>ITEM 813.3: WIRE TYPE 7 NO. 10 GENERAL PURPOSE</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER FOOT</p>	6,000	FT	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
<p>ITEM 813.521: WIRE TYPE 10 - #10 GROUNDING AND BONDING</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER FOOT</p>	1,500	FT	\$ _____
<p>ITEM 813.72: GROUND ROD 10 FT LONG</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	27	EA	\$ _____
<p>ITEM 823.01: PARKING LOT LIGHT POLE AND LUMINAIRE (SINGLE)</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	9	EA	\$ _____
<p>ITEM 823.02: PARKING LOT LIGHT POLE AND LUMINAIRE (DOUBLE)</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	2	EA	\$ _____
<p>ITEM 823.03: SIDEWALK LIGHT POLE AND LUMINAIRE</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	8	EA	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
ITEM 823.51: PHOTO ELECTRIC CONTROL THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER EACH	1	EA	\$ _____
ITEM 823.52: MULTIPLE CONTROL CONTACTOR THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER EACH	2	EA	\$ _____
ITEM 823.53: TIME CLOCK THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER EACH	1	EA	\$ _____
ITEM 823.71: PARKING LOT LIGHT POLE AND LUMINAIRE REMOVED AND DISCARDED THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER EACH	8	EA	\$ _____
ITEM 832.: WARNING-REGULATORY AND ROUTE MARKER - ALUMINUM PANEL (TYPE A) THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER SQUARE FOOT	120	SF	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
<p>ITEM 847.1: SIGN SUP (N/GUIDE)+RTE MKR W/1 BRKWAY POST ASSEM.-STEEL</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER EACH</p>	39	EA	\$ _____
<p>ITEM 852.01: TEMPORARY TRAFFIC CONTROL</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER LUMP SUM</p>	1	LS	\$ _____
<p>ITEM 854.014: TEMPORARY PAVING MARKINGS – 4 INCH (PAINTED)</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER FOOT</p>	5,110	FT	\$ _____
<p>ITEM 864.04.: PAVEMENT ARROWS AND LEGENDS REFLECTORIZED WHITE (THERMOPLASTIC)</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER SQUARE FOOT</p>	720	SF	\$ _____
<p>ITEM 866.104: 4" REFLECTORIZED WHITE LINE (THREMOPLASTIC)</p> <p>THE SUM OF: _____ DOLLARS</p> <p>AND _____ CENTS</p> <p>(\$ _____) PER FOOT</p>	5,110	FT	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY*	UNIT	TOTAL COST
ITEM 866.112: 12" REFLECTORIZED WHITE LINE (THERMOPLASTIC) THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER FOOT	30	FT	\$ _____
ITEM 874.2: TRAFFIC SIGN REMOVED AND RESET THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER EACH	8	EA	\$ _____
ITEM 874.4: TRAFFIC SIGN REMOVED AND STACKED THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER EACH	16	EA	\$ _____
ITEM 874.8: MISCELLANEOUS SIGN REMOVED AND RESET THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER EACH	1	EA	\$ _____
ITEM 999.: POLICE DETAILS (ALLOWANCE) THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER ALLOWANCE	1	ALL	\$ <u>26,400</u>

TOTAL BID PRICE (Sum of all Items above) :

Total Bid Price must be placed in paragraph "C" of the Bid Form)

END OF SECTION

CITY OF NEWTON

GENERAL REQUIREMENTS

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SCOPE

- A. The purpose of this section is to define the basis of measurement and payment for the unit price or lump sum items listed in these Contract Documents.
- B. Section 9.00 of the Commonwealth of Massachusetts Department of Transportation Standard Specifications for Highways and Bridges, 2021 Edition, is hereby included in its entirety.

1.02 PAYMENT ITEMS

- A. Work Items of this Project are referenced with Item Numbers and Item Descriptions similar to those currently in use by the MassDOT Highway Division.

1.03 BASIS OF MEASUREMENT AND PAYMENT

- A. Method of Measurement and Basis of Payment for Work Items shall be as called for under the appropriate section of the MassDOT Standard Specifications, unless modified in the Special Provisions and Standard Specifications.

1.04 UNIT PRICES

- A. Payment will be computed on the basis of the unit price bid for each Item and the quantity of units completed. Unit prices are to include cost of all necessary materials, labor, equipment, overhead, profit, and other applicable costs for items installed complete and accepted by the Engineer. No Payments will be made for the purchase or stockpile of materials or incidentals to the completed items. (See Part 1.06 of this Section.)
- B. The Owner reserves the right to increase or decrease the scope of the Contract work by 25% of the original scope.

1.05 LUMP SUM PRICES

- A. Payment will be computed on the basis of the percentage of work completed on each item in the contract BID as determined by the Engineer. Lump sum prices are to include the cost of all necessary materials, labor, equipment, overhead, profit, and other applicable costs for items installed complete and accepted by the Engineer. No Payments will be made for the purchase or stockpile of materials or incidentals to the completed items. (See Part 1.06 of this Section.)

- B. The Contractor's breakdown of the lump sum bid will be used only as a guide to determine the percentage of completion.

1.06 PRICES INCLUDE

- A. The prices stated in the Proposal include full compensation not only for furnishing all the labor, equipment and material needed for, and for performing the work contemplated by the Contract, but also for assuming all risks of any kind for expenses arising to facilitate the work in a timely manner and all items and incidentals included in the Contract Documents.
- B. The Owner shall pay and the Contractor shall receive the prices stipulated in the BID made a part hereof as full compensation for everything performed and for all risks and obligations undertaken by the Contractor under and as required by the Contract.
- C. The prices for those Items which involve excavation shall include compensation for disposal of surplus excavated material and handling water.
- D. In all Items involving excavation, the price shall be based on doing the entire excavation in earth. Where rock is excavated, the price, therefore, shall be in addition to the cost of excavating earth and no deduction will be made in the amount for earth excavation.

1.07 PAYMENT

- A. In general, payment will be made for all Contract work satisfactorily completed through the end of the previous month. The payment will include any additional work which has been completed and approved and change order work agreed upon by the Owner and Contractor which has been completed and approved.
- B. Each application for payment will indicate the total of a minimum percent retainage, held by the Owner on the total of all work completed under the contract and approved for payment to-date.
- C. Monthly applications for payment may also indicate reduction or increase of the total Contract price when an approved change order results in a net reduction or net increase in the cost and quantity of work to be performed under the Contract.
- D. Special billings and charges against the Contract as credit or payment to the Owner, that are not for change order work, may be subtracted from monies due on any monthly application for payment but shall not serve to reduce the total Contract price.
- E. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Engineer multiplied by the unit price for work which is incorporated in or made necessary by the Work.

FIELD ENGINEERING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Survey work and other field engineering responsibilities of the Contractor.

1.02 REQUIREMENTS

- A. The Contractor shall be responsible for field survey, layout of the work, and the establishing of lines and grades for his use.
- B. Layout and set all lines, levels, grades, elevations, reference marks, batter boards, and measurements required for the construction of the work. Verify such marks by instrument to confirm accuracy. The Engineer shall provide AutoCAD files of the proposed curb line locations to the Contractor.
- C. Locate and protect established horizontal and vertical survey control, and reference points, benchmarks and stone bounds.
- D. Make, check, and be responsible for all measurements and dimensions necessary for the proper horizontal and vertical layout and construction of the Work.
- E. Control datum for survey shall be as established and depicted in the Existing Conditions. Plan.
- F. Verify location and reset (if needed) street right-of-way bounds and markers by a Professional Land Surveyor (PLS) as per the Contract Documents.
- G. All staking shall be directed and performed by qualified engineering or surveying personnel who are trained, experienced, and skilled in construction layout of the type required under this contract. The contractor shall submit the qualifications of the survey personnel to the Owner for review and approval. The owner reserves the right to evaluate the performance of the survey personnel during the course of the work and require the replacement of any personnel whose work, in the judgement of the Owner, is unsatisfactory.
- H. The Engineer will be permitted to check the lines, elevations, reference marks, batter boards, etc., set by the Contractor. The Contractor shall correct any errors found in lines, elevations, reference marks, batter boards, etc. Such a check shall not be construed as approval of the Contractor's work and shall not relieve or diminish the responsibility of the Contractor for the accurate construction and completion of the Work in compliance with the Contract Documents.
- I. The Contractor is to make a video tape and/or photographic record of all existing sideline conditions prior to the commencement of construction activities and/or as may be required as the construction activities progress for the purpose of documenting all decrepit and/or extraordinary points of concern. All video and picture making shall be done on foot and shall not be 'shot' from a vehicle. This video record shall be made by the Contractor and a copy, or a secondary video tape, shall be delivered to the Engineer. A representative from the Engineering Division shall be present at the time of the recording.

1.03 QUALITY ASSURANCE

- A. The Contractor shall employ a Civil Engineer or Land Surveyor registered in the State of Massachusetts, acceptable to the Owner.
- B. The Contractor shall submit a certificate signed by the Contractor's Engineer or Land Surveyor stating elevations and locations of the Work are in conformance with the Contract Documents.

PROJECT MEETINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Administrative and procedural requirements for project meetings.

1.02 PRECONSTRUCTION CONFERENCE

- A. The pre-construction conference will be scheduled and administered within 14 calendar days after the dated "Notice to Proceed." The Contractor shall be prepared to address such topics as understanding of the Contract Documents, Federal/State/Local requirements, projected construction schedules, major personnel, critical work areas, construction facilities and shop drawing/certificates of compliance submittals.

1.03 PROGRESS MEETINGS

- A. The Engineer will schedule and administer progress meetings and specially called meetings throughout the duration of the Work at period intervals. Weekly progress meeting are expected in the initial stages of the project. Meetings can later be scheduled to be Bi-Weekly as determined by the Engineer.
- B. The time and location of such meetings shall be designated by the Engineer and shall be convenient for all parties involved.
- C. The Engineer will prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies.

SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for submission of schedules and shop drawings.

1.02 PROGRESS SCHEDULE

- A. Within 14 calendar days after execution of the Contract Documents, the Contractor shall submit to the Engineer for review a construction progress schedule conforming to requirements specified. This schedule should show the proposed dates of commencement and completion of each of the various subdivisions of work required under this Contract and the anticipated monthly percentage of completion, based on the total contract price. The Contractor shall be responsible for updating, and/or revising, this schedule whenever directed by the Engineer throughout the duration of the Contract. The schedule shall also include a Traffic Management Plan to be coordinated with City Engineering, Newton Police Department, and Newton Free Library Director for each phase and location of work to be constructed under this contract.
- B. Special attention is directed to the requirement that the Contractor shall start the Work, as specified under this Contract, no later than 30 calendar days after the execution of the Contract Documents, unless otherwise authorized by the Owner. The Contractor shall comply with all pre-construction requirements as specified. The Owner reserves the right to delay the commencement of the Work or any part thereof, if the specified requirements as determined by the Engineer have not been satisfied. The Owner further reserves the right to limit or, delay construction, or certain activities thereof, in certain areas of the Contract should the Owner deem it to be in the public's best interest and/or safety to do so.
- C. The Contractor shall contact the appropriate City authorities concerning any public or semi-public events that may occur during the construction period that may affect construction. The Contractor alone shall be responsible for arranging his construction sequence to conform to any restrictions these events may impose. No claims for extras will be allowed because of any delay, extra materials handling, extra excavation, etc. caused by the imposed restrictions. However, additional time may be granted for completion of the work to compensate for delays caused by said restrictions.

1.03 SHOP DRAWINGS

- A. Submit electronic copies of shop and working drawings in PDF format for concrete reinforcement, structural details, piping layout, wiring, materials fabricated especially for the Contract, and materials and equipment for which such drawings are specifically requested.
- B. A maximum of two (2) submittals of each shop drawing will be reviewed by the Engineer. If more submittals are required due to the Contractor's neglect or failure to fulfill the requirements of the Contract plans and/or specifications, or to make corrections or modifications required by the Engineer in the review of the first two submittals, the Engineer will review the submittal and the Contractor will be responsible for the cost of the review, as determined by the Owner based on the Engineer's documentation of time and rates for additional services established in the Engineering Agreement between the Owner and the Engineer.
- C. If re-submittals on shop and working drawings are required, the Engineer will retain three (3) copies and three (3) copies will be returned to the Contractor. When re-submittals are returned to the Engineer, electronic copies in PDF format of the complete submittal shall again be required.

- D. Such drawings shall show the principal dimensions, weight, structural and operating features, space required, clearances, type and/or brand of finish or shop coat, grease fittings, etc., depending on the subject of the drawing. When the dimensions are of particular importance, or when specified, the drawings shall be certified by the manufacturer or fabricator as correct for the Contract. The Contractor shall also be required to certify on the submitted drawings or catalog cuts that the equipment or the assembly are accepted by him and in conformance with the Plans and Specifications.
- E. When so specified or if considered by the Engineer to be acceptable, manufacturer's specifications, catalog data, descriptive matter, illustrations, etc., may be submitted in place of shop and working drawings.
- F. The Contractor shall be responsible for the prompt and timely submittal of all shop and working drawings to eliminate delay to the Work due to the absence of such drawings. All shop and working drawings must be submitted to the Engineer prior to incorporation into the Work unless otherwise permitted by the Engineer. Prior to the submittal of any shop drawings, the Contractor shall submit a schedule of proposed shop drawing transmittals. The schedule shall identify the subject matter of each transmittal, the corresponding specification section number, and the proposed date of submission. Prior to and during the progress of the Work, the schedule shall be revised and resubmitted as requested by the Engineer.
- G. No material or equipment shall be purchased or fabricated for the Contract until the required shop and working drawings have been submitted as hereinabove provided and reviewed for conformance to the Contract requirements. All such materials and equipment and the work involved in their installation or incorporation into the Work shall then be as shown in and represented by said drawings.
- H. Until the necessary review has been made, the Contractor shall not proceed with any portion of the Work for which review is required.
- I. All shop and working drawings shall be submitted to the Engineer by and/or through the Contractor, who shall be responsible for obtaining shop and working drawings from his subcontractors and returning reviewed drawings to them. All drawings shall be clearly marked with the names of the Owner, Contractor, and building, equipment, or structure to which the drawing applies, and shall be suitably numbered. Submitted shop drawings shall be accompanied by a multi-part letter of transmittal provided by the Engineer and completed by the Contractor as directed by the Engineer.
- J. Only drawings which have been checked and corrected by the fabricator should be submitted to the Contractor by his subcontractors and vendors. Prior to submitting drawings to the Engineer, the Contractor shall check thoroughly all such drawings to satisfy himself that the subject matter thereof conforms to the Drawings and Specifications in all respects. All drawings which are correct shall be marked with the date, checker's name, and indication of the Contractor's approval, and then shall be submitted to the Engineer; other drawings shall be returned for correction.

- K. If a shop drawing shows any deviation from the Contract requirements, the Contractor shall make specific mention of the deviations in his letter of transmittal.
- L. The review of shop and working drawings by the Engineer will be general only, and nothing contained in this Section shall relieve, diminish, or alter in any respect the responsibilities of the Contractor under the Contract Documents and, in particular, the specific responsibility of the Contractor for details of design and dimensions necessary for proper fitting and construction of the work as required by the Contract and for achieving the result and performance as specified.
- M. Should the Contractor submit equipment that requires modifications to the structures, piping, electrical conduit, wires, appurtenances, or layouts etc., either existing or as detailed on the Drawings, he shall also submit details of the proposed modifications. If such equipment and modifications are accepted, the Contractor, at no additional cost to the Owner, shall do the work necessary to make such modifications.
- N. The Contractor shall furnish additional copies of shop drawings or catalog cuts when so requested.

1.04 JOB-MIX FORMULA

- A. Work shall not begin on any Newton project nor shall any mixture be accepted until the Contractor has submitted to the Engineer a specific job-mix formula for the particular uniform combination of materials and sources of supply to be used on each project in conformance with the requirements of Section M3 of MassDOT's Standard Specifications. The job-mix formula shall be submitted in writing by the Contractor to the City at least 30 days prior to the start of paving operations.

QUALITY CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for Contractor's quality control of products, suppliers, manufacturers, services, site conditions, and workmanship, to produce work of the specified quality.

1.02 QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Comply fully with manufacturers' instructions, including each step in sequence.
- B. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- D. Perform work by persons qualified to produce workmanship of specified quality.
- E. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.03 FIELD SAMPLES

- A. Install field samples at the site as required by individual specifications sections for review.
- B. Acceptable samples represent a quality level for the Work.
- C. Where field sample is specified to be removed, clear area only after field sample has been accepted by the Engineer.

1.04 CERTIFIED WELDERS

- A. Structural welds shall be made only by operators who have been qualified by tests, as prescribed in the "Standard Qualification Procedure" of the American Welders Society, to perform the type of work required.
- B. Pipe welds shall be made only by operators who have been qualified by the National Certified Pipe Welding Bureau, and each operator's qualification record shall be submitted to the Engineer before any work is performed.
- C. Shop welding shall be in accordance with the "Code for Welding in Building Construction".

TESTING LABORATORY SERVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Qualification, duties, and responsibilities of testing laboratories. Also, coordination and scheduling are responsibilities of the Contractor.
- B. Related Sections
 - 1. Materials and Equipment

1.02 PAYMENT PROCEDURES

- A. Initial Testing: Unless otherwise specified herein, the Owner will pay for additional initial testing services required by the Engineer.
- B. Retesting: When initial tests indicate noncompliance with the Contract Documents, subsequent retesting occasioned by the noncompliance shall be performed by the same testing agency, and the costs thereof will be deducted by the Owner from the Contract Sum.
- C. Contractor's Testing: Inspecting and testing performed exclusively for the Contractor's convenience or as required of him by the technical specifications shall be the sole responsibility of the Contractor.

1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. E-329-90, Use in the Evaluation of Testing and Inspection Agencies as Used in Construction.

1.04 REQUIREMENTS

- A. Asphalt material will only be accepted by the City if the test results from acceptance samples obtained at the production plant and from the compacted pavement indicate conformance to the approved job-mix formula and the quality limits specified in Section M3 of MassDOT's Standard Specifications.
- B. Work included:
 - 1. Cooperate with the Owner's selected testing agency and all others responsible or testing and inspecting the Work.
 - 2. Provide other testing and inspecting as specified to be furnished by the Contractor in this Section and/or elsewhere in the Contract Documents.

3. Where no testing requirements are described but the Owner directs testing, the Contractor shall provide testing under the requirements of this Specification.

1.05 QUALITY ASSURANCE

- A. The testing laboratory will be qualified to the Owner's approval in accordance with ASTM E329-90.
- B. Regulatory requirements
 1. Testing, when required, will be in accordance with all pertinent codes, regulations, and with selected standards of the American Society for Testing and Materials.
 2. Regulatory requirement inspections and tests required by codes or ordinances, or by a plan approved authority, and which are made by a legally constituted authority, shall be the responsibility of and shall be paid for by the Contractor unless otherwise provided in the Contract Documents.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Comply with the pertinent provisions of the Materials and Equipment section.
- B. Promptly process and distribute, to the Engineer, required copies of test reports and instructions to assure necessary retesting and replacement of materials with the least possible delay in progress of the Work.

1.07 SCHEDULING

- A. Establishing schedule
 1. By advanced discussions with the testing laboratory selected by the Owner, determine the time required for the laboratory to perform its tests and to issue each of its findings.
 2. Provide all required time within the construction schedule.
 3. Coordinate testing activity with the appropriate testing laboratory.
- B. Revising schedule
 1. When changes of construction schedule are necessary during construction, coordinate all such changes with the testing laboratory as required.
- C. Adherence to schedule
 1. When the testing laboratory is ready to test according to the established schedule, but is prevented from testing or taking specimens due to incompleteness of the Work, all extra charges for testing attributable to the delay may be back-charged to the Contractor and shall not be borne by the Owner.

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

- A. Representatives of the testing laboratory shall have access to the Work at all times and at all locations where the Work is in progress. Provide facilities for such access to enable the laboratory to perform its functions properly.
- B. All specimens and samples for testing, unless otherwise provided in the Contract Documents, shall be taken by the testing personnel. All sampling equipment and personnel will be provided by the testing laboratory. All deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory.
- C. All work constructed as a deviation from the Contract Documents shall be approved prior by the Engineer in writing. All subject work shall be documented and the submission of required as-built will be the responsibility of the Contractor.

TEMPORARY UTILITIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for temporary utilities required during construction.

1.02 GENERAL REQUIREMENTS

- A. The Contractor is responsible for payment of all costs associated with the installation and operation of all temporary utilities necessary for the completion of the work. The Contractor shall arrange with the Engineer and Owner methods of determining monthly utility costs for Temporary Utilities prior to connection of any temporary systems. The Contractor shall pay the Owner on a monthly basis for all temporary utility costs. The Temporary Utilities to be paid by the Contractor include, but are not limited to, the following: Electricity, Water, Sanitary, Heating, Ventilation, Plumbing and other services required to complete the work.

1.03 TEMPORARY SANITARY FACILITIES

- A. Provide adequate sanitary facilities for the use of those employed on the Work. Sanitary facilities shall be made available when the first employees arrive on the site of the Work, be properly secluded from public observation, and be maintained during the progress of the Work in suitable numbers. The location for the placement of sanitary facilities shall be approved in writing by the Engineer.
- B. Maintain sanitary facilities in an orderly and sanitary condition at all times and enforce their use. Rigorously prohibit the committing of nuisances on the site of the Work, on the lands of the Owner, or any adjacent property.

TEMPORARY CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for cleaning, maintenance of the project site, barriers and fences required during construction.

1.02 CLEANING DURING CONSTRUCTION

- A. Contractor shall perform clean-up operations during construction as herein specified, or as specified elsewhere within the Contract Documents.
 - 1. Control accumulation of waste materials and rubbish; promptly dispose of off-site. Bear all costs, including fees resulting from disposal.
 - 2. Maintain project in accordance with all local, state and federal regulatory requirements.
 - 3. Store volatile wastes in covered metal containers and remove from premises.
 - 4. Prevent accumulation of wastes that create hazardous conditions.
 - 5. Provide adequate ventilation during use of volatile or noxious substances
- B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - 1. Do not burn or bury rubbish and waste materials on site.
 - 2. Do not dispose or volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 - 3. Do not dispose of wastes into streams or waterways.
 - 4. Use only those materials which will not create hazards to health or property and which will not damage surfaces.
 - 5. Execute cleaning to ensure that the buildings, sites, and adjacent properties are maintained free from accumulations of waste materials and rubbish and wind-blown debris, resulting from construction operations.
 - 6. Provide on-site containers for collection of waste materials, debris, and rubbish.
 - 7. Remove waste materials, debris, and rubbish promptly from the site and dispose of at legal disposal areas off the construction site.
 - 8. During its progress, the work and the adjacent areas affected thereby shall be kept cleaned up and all rubbish, surplus materials, and unneeded construction equipment shall be removed and all damage repaired so that the public and property owners will be inconvenienced as little as possible.

9. Where material or debris has washed or flowed into or been placed in existing watercourses, ditches, gutters, drains, pipes, structures, work done under this contract, or elsewhere during the course of the Contractor's operations, such material or debris shall be entirely removed and satisfactorily disposed of during the progress of the work, and the ditches, channels, drains, pipes, structures, and work, etc. shall, upon completion of the work, be left in a clean and neat condition.

1.03 DUST CONTROL

- A. Provide adequate means for the purpose of preventing dust caused by construction operations throughout the period of the construction contract.
- B. This provision does not supersede any specific requirements for methods of construction or applicable general conditions or performance obligations of the Contractor.
- C. Adequate dust control shall be applied as, and when, directed by the Engineer. No additional compensation will be made for such work and shall be incidental to the Contract.

1.04 EROSION AND SEDIMENT CONTROL

- A. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- B. Minimize amount of bare soil exposed at one time.
- C. Provide temporary measures, such as berms, dikes, and drains, to prevent water flow.
- D. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- E. Construct sediment control devices for discharge from dewatering trenches.
- F. Construct all sedimentation control devices shown on the plans.

1.05 NOISE CONTROL

- A. Develop and maintain a noise-abatement program and enforce strict discipline over all personnel to keep noise to a minimum.
- B. Execute construction work by methods and by use of equipment that will reduce excess noise.
 1. Equip air compressors with Silencers, and power equipment with mufflers.
 2. Manage vehicular traffic and scheduling to reduce noise.

1.06 POLLUTION CONTROL

- A. Special care shall be taken to prevent contamination or muddying up or interfering in any way with the stream flows, if any along the line of work. No waste matter of any kind will be allowed to discharge into the stream flows or impounded water of any pools or other bodies of water.

1.07 SURFACE WATER CONTROL

- A. Take all precautions to prevent damage to the work or equipment by high waters or by storms. The Engineer with the approval of the Owner may prohibit the carrying out of any work at any time when in his judgment, high water or storm conditions are unfavorable or not suitable, or at any time, regardless of the weather, when proper precautions are not being taken to safeguard previously constructed work or work in progress.
- B. In case of damage caused by the failure of the Contractor to take adequate precautions, the Contractor shall repair or replace equipment damaged and shall make such repairs or rebuild such parts of the damaged work, as the Engineer may require, at no additional expense to the Owner.

1.08 BARRIERS AND ENCLOSURES

A. Fences and Barricades

1. Provide and maintain temporary fences, barriers, lights, guardrails, and barricades as indicated in the Contract Documents, or as necessary to secure the Work and adjacent property and protect persons and property.
2. Obtain necessary approvals and permits and provide temporary expedients as necessary to accommodate tasks requiring items mentioned herein.

B. Protection of Trees

1. The Contractor shall notify the Tree Warden before commencing work within the drip line of any Tree.
2. If, in the opinion of the Engineer or Tree Warden, and so directed by either, the Contractor shall be required to provide adequate and satisfactory tree protection (either trunk protection or drip line protection, or both) as directed. No additional compensation will be made for such protection and shall be incidental to the Contract.
3. The Contractor shall take care not to harm trees along the sides of roads or within the existing facility in which the construction work is to be done or trees on adjacent lands except as indicated on the drawings or with the written permission of the Owner and any other owner of the trees involved. Care shall be taken not to cut tree roots to harm the growth of trees to remain.
4. If, in the opinion of the Engineer or Tree Warden, any trees damaged during construction can be repaired, the Contractor shall satisfactorily repair them at no further cost to the Owner.

5. If, in the opinion of the Engineer or Tree Warden, any tree damaged during construction cannot be repaired and should be removed, the Contractor shall satisfactorily remove and replace, with a species specified by and at the direction of the City Tree Warden at no further cost to the Owner.

TRAFFIC REGULATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for traffic control for the duration of the Contract.

1.02 REFERENCES

- A. Manual of Uniform Traffic Control Devices (MUTCD) latest edition, including published revisions; Specifications for Temporary Traffic Control.

1.03 PERFORMANCE REQUIREMENTS

- A. The Contractor shall prepare and submit to the Engineer a proposed work schedule that complies with the plans and specifications. No work shall start until the Engineer's approval of the schedule is received.
- B. The Contractor shall have the sole responsibility for the maintenance and protection of traffic.
- C. No construction will be permitted within 300 feet of a school, day care center, or day camp when children are either arriving or departing the facility. The actual hours involved will be obtained by the Contractor from the respective facility.
- D. An authorized representative of the Contractor shall be available on a 24-hour basis for the duration of the Contract for the purpose of correcting construction-related impediments or hazards. This contact shall be responsible for making corrections within a timely manner. The contact information shall be supplied with the rest of the required submittals.
- E. The library will be remain open during construction. The construction shall be perform in phases and the construction shall not be required to close down the library parking lot unless coordinated and approved by the City and the Library's representatives. The Contractor shall coordinate with the City and the Library's representative with regards to minimum available parking spaces required at the library parking lot during construction at each phase of the construction. The Contractor shall submit traffic control plans to the City and Library's representatives for approval prior to starting each phase of construction. The traffic control plan shall detail all typical and specific work zones and the locations of available parking spaces at the library parking lot, the duration for each phases of construction, as well as the planned accessible pedestrian route through, or adjacent to, the work zone.

F.

1.04 SUBMIT TRAFFIC PLANS

- A. In accordance with the Submittals section, submit a traffic plan complying with the requirements set forth by this section, the Contract Drawings, and the City of Newton.
- B. Traffic control plans shall detail all typical and specific work zones, staging, and temporary parking spaces pavement markings at each stage of the construction and detours for each roadway and construction activity for the project to complete the work as listed in the Contract Documents and Construction Plans, as well as the planned accessible pedestrian route through, or adjacent to, the work zone.

1.05 SITE CONDITIONS

- A. Replace at no cost to the Owner pavement markings, legends, and lane arrows removed or damaged by the construction operation that are not within the Construction Plans.
- B. Restore temporary detours to original condition.
- C. Replace traffic signal loops damaged during construction **within 72 hours**.

1.06 SCHEDULING

- A. The Contractor shall minimize the construction impacts to the traveling public and abutting property owners by limiting the extent of roadway excavation and requiring the restoration of a weather-tight pavement surface as stipulated below. All proposed underground installations (utilities, drainage, sewer, etc.) must be in place prior to the beginning of roadway excavation.
- B. The Owner reserves the right to alter the lengths of excavation and other operations in order to ensure the safety of the traveling public and abutting property owners.

PART 2 PRODUCTS

2.01 TRAFFIC CONTROL DEVICES

- A. All Traffic Control Devices shall be in accordance with the MUTCD and maintained as such.

PART 3 EXECUTION

3.01 INSTALLATION OF TRAFFIC CONTROL DEVICES

- A. Installations shall be in accordance with all requirements and standards as specified in the MUTCD), and it shall be the responsibility of the Contractor to install and maintain as directed by the Engineer.

MATERIALS AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for the delivery, storage, handling, and installation of systems, materials, manufactured units, equipment, components, and accessories used in the work.

1.02 DELIVERY

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

1.03 STORAGE AND PROTECTION

- A. Refer to the Specifications Sections for requirements pertaining to the storage and protection of materials and equipment.
- B. Store products in accordance with manufacturers' instruction, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures and maintain within temperature and humidity ranges set forth in the manufacturers' instructions.
- C. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering and provide ventilation to avoid condensation.
- D. Store loose granular materials on solid surfaces in a well-drained area and prevent mixing with foreign matter. Loose material shall also be protected in accordance with the Erosion Control specifications.
- E. Arrange storage to provide access for inspection. Periodically inspect to assure that products are undamaged and maintained under the required conditions.
- F. Materials stored and location of storage shall be approved by the Engineer prior to delivery.

1.04 INSTALLATION STANDARDS

- A. Comply with the Specifications and referenced standards as minimum requirements.
- B. Components required to be supplied in quantity within a Specification Section shall be the same and shall be interchangeable.

- C. Do not use materials and equipment removed from existing structures except as specifically required, or allowed, by the Contract Documents.
- D. Perform work by persons qualified to produce workmanship of specified quality.
- E. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.
- F. When work is specified to comply with manufacturers' instructions, submit copies as specified in the Submittals section, distribute copies to persons involved, and maintain one set in field office.
- G. Perform work in accordance with details of instructions and specified requirements.

MAINTENANCE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for maintaining work completed under this Contract.

1.02 MAINTENANCE PERIOD

- A. The general maintenance period for all construction or materials under this Contract shall be one (1) year after the date of the acceptance of the work by the Owner, or as provided by other sections of this Specification.
- B. If the Owner puts any structure or equipment to use prior to acceptance of all work under the Contract, the maintenance period for such structures or equipment shall be calculated from the time use begins.
- C. Contractor agrees to replace the material that does not conform to the Contract requirements and to repair any damage of material or work without cost to the Owner to the satisfaction of the Engineer in conformance with Contract Documents provided orders for replacement and/or repairs are received in writing by the Contractor within the one year period.
- D. This Section shall in no way limit the duration of the Contractor's responsibility for the correction of any defect due to workmanship or materials provided by the Contractor that are not in compliance with the Contract Documents.

1.03 ABUSE OF WORK

- A. The Contractor is not obligated to perform work of replacement or repair that he may prove is required because of abuse by parties other than the Contractor, after the date the Owner puts to continuous use the work requiring replacements or repair, or after date the Owner has approved the Certificate of Completion.

1.04 EMERGENCY REPAIRS

- A. If the Owner deems necessary, the Owner shall order that replacement or repairs be undertaken within 24 hours.
- B. If the Contractor delays or fails to make the ordered replacement or repairs within the time specified, the Owner shall have the right to make such replacements or repairs and the expense shall be deducted from moneys due the Contractor, or moneys of the Contractor retained by the Owner.

END OF SECTION

CITY OF NEWTON

SCOPE OF WORK

The work under this contract consists of furnishing all necessary labor, materials, and equipment required for full-depth pavement reclamation with SUPERPAVE pavement, full-depth porous pavement construction, grading and installation of a new drainage system, landscaping, parking lot lighting, and installation of signage and pavement markings. The proposed work also includes ADA-compliant sidewalk, walkway, and pedestrian curb ramp reconstruction, removing and resetting existing granite curb, installation of new granite curb, and all other work as shown on the plans, as described in the Contract Documents (unless specifically indicated as not to be done), and as directed by the City. The work shall be performed at the Free Library Parking Lot in the City of Newton.

The limits of work are shown on the plans included in these documents. The City of Newton reserves the right to change, modify, increase, or decrease the limits of work. The exact limits of work will be identified by the City prior to the Contractor beginning work. All work shall be performed in accordance with these Specifications.

The existing solar canopy and columns in the parking lot shall be retained.

The Scope of Work shall include providing all materials for the work outlined in the specifications provided in subsequent sections.

The Contractor shall provide a project schedule to the City at the Pre-Construction Meeting for approval prior to any construction commencing.

The library and parking lot will be remain open during construction. The construction shall be performed in phases and shall not require the library parking lot to be closed unless coordinated and approved by the City and the Library's representatives. The Contractor shall coordinate with the City and the Library's representative with regard to minimum available parking spaces required at the library parking lot during construction. The Contractor shall submit traffic control plans to the City and Library's representatives for approval prior to starting each stage of construction. The traffic control plan shall detail all typical and specific work zones and the locations of available parking spaces at the library parking lot, the duration for each phase of construction, as well as the planned accessible pedestrian route through, or adjacent to, the work zone.

It is anticipated that the work will commence on or after April 1, 2022 and that all proposed work for this contract shall be completed by December 31, 2022.

The Contractor shall designate one person to be the point of contact for this project. This person shall coordinate with the City with regard to all planning, scheduling, sequencing of activities, and day-to-day operations. This person is to be on-site whenever work is being performed, whether by the Contractor's internal personnel or by any and all subcontractors.

The Contractor shall review the existing and proposed conditions with the City prior to beginning work. The Contractor is responsible for taking accurate measurements of actual field conditions prior to ordering proposed materials or beginning construction. The Contractor shall notify the City of quantities that differ from the Engineer's Estimate by more than 15% prior to placing any material orders.

All work done under this contract shall be in conformance with:

- the City of Newton General Construction Details dated December 2021,
- the Newton Street Design Guide, dated June 2018,
- the Commonwealth of Massachusetts Department of Transportation Standard Specifications for Highways and Bridges, 2021 Edition, as amended,
- the latest Massachusetts Department of Transportation Construction Standard Details,
- the 2006 Massachusetts Highway Department Project Development and Design Guide dated January 2006,
- the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD) with revisions and Massachusetts Amendments,
- the 1990 Standard Drawings for Signs and Supports
- the latest Public-Right-of-Way Accessibility Guidelines (PROWAG)
- the latest United States Access Board's ADA and ABA accessibility guidelines,
- the latest Massachusetts Architectural Access Board (AAB) accessibility regulations,
- the 1968 Standard Drawings for Traffic Signals and Highway Lighting,
- the latest edition of American Standard for Nursery Stock,
- the Contract Project Manual with any Project Addenda.

The General Conditions, Supplementary Conditions, and Special Provisions shall take precedence over the General Requirements of Division I of the MassDOT Standard Specifications.

References within the Standard Specifications to MassDOT, the Department, or the Engineer shall, for the purposes of this Contract, be construed to mean the City of Newton or its designated representative.

ARCHITECTURAL ACCESS BOARD & AMERICANS WITH DISABILITIES ACT TOLERANCES AND STANDARDS

The Contractor is hereby notified that they are ultimately responsible for constructing all project elements in strict compliance with the current AAB/ADA rules, regulations, and standards.

All construction elements in this project associated with sidewalks, walkways, ramps, and curb cuts are controlled by 521CMR - Rules and Regulations of the 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 or for dimensions less than the minimum dimensions.

Contractors shall establish grade elevations at all curb cut locations and shall set transition lengths according to the appropriate table in the Construction Standards (or to the details shown on the plans).

ORDERING OF MATERIALS AND DRAWINGS

The Contractor shall provide the Engineer within 30 days of receipt of the contract, written evidence that:

1. Contractor has ordered the shop drawings for the materials for which shop drawings are required for this contract.
2. Contractor has ordered from a supplier or manufacturer materials necessary to complete the project.

The Contractor shall further provide the Engineer written evidence within 30 days of receipt of the Contract that these orders have been confirmed in writing by the manufacturer with delivery dates appropriate for timely completion of the project. These confirmations of orders will become part of the project records.

Failure to comply with any of the ordering requirements shall nullify a request for an extension of the project completion date.

SHOP DRAWING SUBMITTAL (Supplementing Subsection 5.02 of MassDOT's Standard Specifications)

The following is a list of items and materials that require shop drawing or catalog cut approval:

- 1. Independent Testing Laboratory to be used**
- 2. Tree Protection Armoring and Pruning**
- 3. Gravel Borrow (Type B)**
- 4. Crushed Stone**
- 5. SUPERPAVE Hot Mix Asphalt Job Mix Formula**
- 6. Granite Curbing**
- 7. Catch Basins**
- 8. Manholes**
- 9. HDPE Pipe and Perforated HDPE Pipe**
- 10. Temporary Construction Fence**
- 11. Silt Sack**
- 12. Cement Concrete**
- 13. Detectable Warning Panels**
- 14. Loam and Seed**
- 15. Silt Fence and Filter Sock**
- 16. Porous Pavement (see specification)**
- 17. Signage**
- 18. Qualifications of construction survey control personnel**
- 19. Name and Certification Number of the Massachusetts Certified Arborist**
- 20. Epoxy Setting Compound**
- 21. Parking Lot Light Post and Luminaires**
- 22. Electrical Work Submittals**

JOINTS (Supplementing Subsection 460.49 of MassDOT's Standard Specifications)

The application of hot poured rubberized asphalt sealer, where required in accordance with Subsection 460.49 of the Standard Specifications, shall be considered incidental to the work included under Items 450.22 through 450.53.

CONCURRENT WORK BY OTHERS WITHIN PROJECT LIMITS (Supplementing Subsection 5.06 of MassDOT's Standard Specifications)

Concurrent work may be in progress in the project areas by the City of Newton or utility companies or others. The Contractor is required to coordinate his activities with all work by others within and adjacent to the project limits.

No additional payments will be allowed for any disruption of work schedule caused by or required to coordinate work in this contract and work to be performed by others.

CONSTRUCTION (STAKES) STAKING (Supplementing Subsection 5.07 of MassDOT's Standard Specifications)

The Contractor shall furnish all the surveys, establish the baseline and lay out the proposed work shown on the plans. All survey work will be in accordance with MassDOT, Highway Division standards and done by a licensed surveyor registered in Massachusetts. Cost of survey work shall be deemed to be included in the contract bid prices and no additional payment shall be made therefor.

STEEL PLATES IN CONSTRUCTION ZONES (Supplementing Subsection 7.09 of MassDOT's Standard Specifications)

At the end of each working day, trenches in areas of public travel shall be backfilled and covered with steel plates, each edge of such plates shall either be beveled or protected by a slope of two (2) feet horizontally to one (1) inch vertically. Any temporary patching material may be used to construct the ramps. The cost of necessary patching materials, and their maintenance and removal, will be considered incidental to the item involved, with no separate payment.

PUBLIC SAFETY AND CONVENIENCE (Supplementing Subsection 7.09 of MassDOT's Standard Specifications)

Vehicular and pedestrian travel on the public way shall be maintained by the Contractor during construction and access to abutting land shall be provided at all times. If so directed, temporary walkways will be provided by the Contractor to ensure safe passage under various weather conditions.

PROPERTY BOUNDS (Supplementing Subsection 7.13 of MassDOT's Standard Specifications)

The Contractor shall exercise due care when working around all property bounds that are to remain. The Contractor shall verify the location and reset (if needed) any street right-of-way bounds or markers damaged or moved by result from the actions of the Contractor; the bound shall be accurately replaced and/or realigned by the Contractor as required by the Engineer. The Contractor shall employ a Land Surveyor registered in Massachusetts to perform this work. No further compensation will be due to the Contractor for the materials and labor required to re-establish a bound disturbed by the Contractor except as otherwise noted herein.

PROTECTION OF UNDERGROUND FACILITIES

The Contractor's attention is directed to the necessity of making his own investigation in order to assure that no damage to existing structures, drainage lines, traffic signal conduits, etc. will occur. The Contractor shall notify the City of Newton and Mass. DIG SAFE and procure a DIG SAFE number for each location prior to disturbing the existing ground in any way.

DIG SAFE Call Center 1-888-344-7233

The Contractor shall notify the City and Dig Safe 72 hours prior to the start of construction.

NOTICE TO OWNERS OF UTILITIES (Supplementing Subsection 7.13 of MassDOT's Standard

Specifications)

The Contractor shall give written notice to all public service corporations or officials owning or having charge of public or privately owned utilities of his intention to commence operations affecting such utilities one (1) week in advance of the commencement of such operations. The Contractor shall, at the same time, file a copy of such notice with the Engineer. Before commencing work on service connections, the Contractor shall contact the serving utility to ensure that the proper construction procedures are followed.

The following are the names and addresses of some of the agencies which may be affected, and must be notified. Completeness of this list is not guaranteed. The Contractor shall ensure that all affected agencies are notified.

City Contract:	Lou Taverna, Ltaverna@newtonma.gov, (617) 796-1020
City Construction:	Frank Nichols, Fnichols@newtonma.gov, (617) 796-1033
Police:	Captain Dan Walsh, Dwalsh@newtonma.gov, (617) 796-2100
Fire:	Fire Prevention line, (617) 796-2210
Fire Alarm & Wires Division:	Glenn Manning (617) 796-2256
Deputy Commissioner (Tree Warden)	Marc Welch (617) 796-1500

Water/Sewer/Drain:	Bob Sullivan, Livio Cence (617) 796-1640
National Grid/Gas:	Tammy Saporitio, 978-270-5205 tammy.saporitio@nationalgrid
Eversource/Electric:	Kim Khounesombat kim.khounesombat@eversource.com
MWRA:	Ralph Francesconi, (617) 305-5827
Comcast:	Manual Furtado (508) 884-2362
RCN:	Joe Volpe (617) 828-6904
Verizon:	Stanley Usovicz, stanley.j.usovicz@verizon.com

NOTICE TO UNITED STATES POSTAL SERVICE (USPS) POSTMASTER

The Contractor shall give sufficient notice to the USPS Postmaster of his intention to conduct work in an area where a Mail Collection Box, Mail Transfer Box, or the service thereof may be affected by the construction operations. Before commencing work near a Mail Collection Box that will be affected by the construction, the Contractor shall contact the USPS Postmaster responsible for the Mail Box to ensure that proper procedures are followed. The Contractor may not commence work in this area until the unit has been moved by the USPS or its designee.

PROTECTION OF UTILITIES AND PROPERTY (Supplementing Subsection 7.13 of MassDOT’s Standard Specifications)

The Contractor, in constructing or installing facilities, alongside or near sanitary sewers, storm drains, water or gas pipes, electric or telephone conduits, poles, sidewalks, walls or other structures, shall, at his expense, sustain them securely in place, cooperating with the officers and agents of the various utility companies and municipal departments which control them, so that the services of these structures shall be maintained. He shall also be responsible for the repair or replacement, at his own expense, of any damage to such structures caused by his acts or neglect and shall leave them in the same condition as they existed prior to the commencement of work.

In case of damage to utilities, the Contractor shall promptly notify the owner and shall, if requested by the Engineer, furnish laborers to work temporarily under the owner's direction in providing access to the utility. Pipes or other structures damaged by the operation of the Contractor may be repaired by the City or by the utility company which suffers the loss. The cost of such repairs shall be borne by the Contractor without compensation therefor.

If, as the work progresses, it is found that any of the utility structures are so placed as to render it impracticable, in the judgment of the Engineer, to do the work called for under this Contract, the Contractor shall protect and maintain the services in such utilities and structures and the City will, as soon thereafter as it reasonably can, cause the position of the utilities to be changed or take such other action as it deems suitable and proper.

If live service connections are to be interrupted by excavation of any kind, the Contractor shall not break the service until new services are provided. Abandoned services shall also be plugged off or otherwise made secure by the utility company involved.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all the work involved in protecting or repairing property as specified in this section shall be considered as included in the prices paid for the various contract items of work, and no additional compensation will be allowed therefor.

The Contractor shall be required to furnish all labor, materials, and equipment necessary to protect underground structures and electrical vaults within the project site from construction debris and water penetration. When underground structures or electrical vault roofs are excavated, the Contractor shall be responsible for maintaining security of these structures or electrical vaults against unauthorized access. The Contractor shall be responsible for leaving the structures and vaults in a state of water tightness equal to that existing at the commencement of the contract.

The Contractor will cooperate fully with all utility companies private or public and will notify all such companies at least twenty-four (24) hours prior to excavating in the vicinity of any utility. It is understood that the Contractor has considered in his bid the existence of the various utilities and that no additional compensation will be allowed for any delays, inconvenience, or damage sustained by him due to any interference by said utilities.

The Contractor shall pay the serving utility for their services rendered for the connection of the overhead service connections.

DRAINAGE (Supplementing Subsection 7.13 of MassDOT's Standard Specifications)

It shall be the Contractor's responsibility to maintain proper drainage in the areas under construction until the final system is put into use.

All affected existing pipes and structures within the limits of this contract shall be left in a clean and operable condition at the completion of the work. It shall be the responsibility of the Contractor to make certain that new drainage systems carrying run-off from the limit of this project operate efficiently to their points of discharge into existing systems. Debris in pipes and structures, including deposition of hazardous material as a result of the Contractor's operations, shall be removed by the Contractor in accordance with state and federal guidelines without compensation.

All the above work shall be included under the relevant drainage item without additional compensation therefor. Any adjustments made to new drainage structures will be included under the contract unit price for the respective structures.

DRAINAGE SYSTEM

It shall be the Contractor's responsibility to maintain a proper drainage system at all times in the areas under construction. Existing drainage shall not be taken out of service without prior written notice to the City. All pipes and structures installed as part of this Contract shall be left in a clean and operable condition at the completion of the work.

Drainage castings in new pavement areas shall be installed at base or binder course grade, as directed by the Engineer, and reset to the proposed finished surface grade prior to placement of the pavement surface course.

All existing pipes to be abandoned shall be plugged with brick masonry not less than eight (8) inches in thickness in conformance with the MassDOT Standard Specifications, Section 201.62.

No separate payment will be made for the maintenance of the existing drainage system or for plugging of pipes, but all costs in connection therewith shall be included in the unit prices bid for the various Contract items.

DRAINAGE STRUCTURES

Where new pipe is shown on the drawings to be connected into an existing drainage structure to remain, the existing structure shall be first cleaned to remove all mud, debris, and other material. The existing structure wall shall be carefully and neatly cut to provide the minimum size opening required for the insertion of the new pipe. The proposed pipe end shall be set or cut off flush with the inside face of the existing structure wall and the remaining space around the pipe completely filled with cement grout for the full thickness of the structure wall.

Existing shaped inverts shall be reconstructed as necessary to provide a smooth and uniform flow channel from the new pipe through the existing structure.

No separate payment will be made for the cost of connecting new pipes into existing structures, cleaning, and necessary alterations of existing structures, but all such costs shall be taken as included in the unit prices bid for the various pipe items. In addition, no separate cost will be made for existing frame and grate (or cover) to be removed and stacked but shall be made incidental to the appropriate drainage structure items, whether it be adjusted, change in type, remodeled, abandoned, or proposed.

PROTECTION OF PERSONAL PROPERTY

The Contractor shall exercise due care when working around all personal property and roadside features which are to remain. Trees to remain within the limits of work shall have tree protection. Any damage resulting from the actions of the Contractor shall be replaced and/or repaired by the Contractor as directed by the Engineer. No further compensation will be due the Contractor for the materials and labor required to protect personal property, roadside features to remain, or protection for trees.

SAWCUTTING

Sawcuts shall be made in the existing pavement at areas of new or reset curb, limits of full-depth pavement construction, limits of box widening, cement concrete pavement, sidewalk construction, limits of work, and as directed by the Engineer. Payment for this work shall be included in the unit price under the applicable items without additional compensation.

The work under sawcuts shall conform to the relevant provision of Section 480 of the Standard Specifications and the following:

Sawcutting equipment shall be approved by the Engineer prior to commencing work.

All edges of excavations made in existing pavements and sidewalks which will not be overlaid and which will be visible shall be squared by sawcutting with power-driven tools to provide a neat, clean edge for joining new pavement and sidewalks as shown on the Plans. Ragged, uneven edges shall not be accepted. Areas which have been broken or undetermined shall be edged neatly with a minimum disturbance to

remaining pavement or sidewalks.

Sawcut surfaces shall be sprayed or painted with a uniform thin coat of RS-1 asphalt emulsion immediately before placement of hot mix asphalt against the surface.

No separate payment will be made for sawcutting required for installation of drainage, and water pipe trenches, structures, conduit trench, and permanent utility trenches, but all costs in connection therewith shall be included in the unit price bid for applicable items.

FINE GRADING AND COMPACTION

All areas consisting of existing subbase, newly placed subbase, or any other location where fine grading and compaction is necessary, or directed by the Engineer, prior to the installation of top or finish courses shall be thoroughly fine graded and compacted to provide a neat, clean surface for the installation of new materials.

WORK SCHEDULE (Supplementing Subsection 8.02 of MassDOT's Standard Specifications)

Work on this project is restricted to 7:00 A.M. to 4:30 P.M. for **Daytime** work (be advised that the City of Newton may restrict work on arterial streets between the hours of 7:00 A.M. to 9:00 A.M. and from 3:30 P.M. to 4:30 P.M. in certain situations as designated by the Engineer), 10:00 P.M. to 5:00 A.M. of the next day for **Nighttime** work, and 8:00 A.M. to 4:30 P.M. for **Weekend** (Saturday and Sunday) work (be advised that the City of Newton may restrict work on arterial streets between the hours of 8:00 A.M. and 9:00 A.M. and between 3:30 P.M. and 4:30 P.M. in certain situations as designated by the Engineer). The Contractor is further advised that the hours of operations are set by law. In addition, no weekend or holiday work will be allowed unless special permission is granted. Any work to be completed as part of Nighttime or Weekend time shall be approved or directed by the City. These stipulations apply to the Prime Contractor and all Subcontractors working on the same shift. The Prime Contractor will have a superintendent on site whenever work is being performed. The City might consider work being performed on this contract when the library is closed during Nighttime or on Saturdays, Sundays, or Holidays with prior approval and direction by the City. Work will not be allowed the day before or the day after a long weekend, which involves a holiday without prior approval by the City. Exceptions may be taken if so stated in the Contract Documents.

There shall be no work beyond the winter shut down date, unless approved in writing by the Engineer. Workdays shall be continuous until the winter shut down. No additional compensation shall be made for variations in Work Schedule required by the Engineer, and all costs associated with complying with work schedule shall be considered part of the contract bid price.

SCHEDULE OF OPERATIONS (Supplementing Subsection 8.02 of MassDOT's Standard Specifications)

The Contractor shall construct each phase in order as shown in the Construction Plans unless otherwise directed or approved by the Engineer. The Contractor may work on more than one phase at a time, coordinated with and approved by the Engineer. It shall be the Engineer's option to alter the phasing of work at any time during the project when a change is deemed to be in the best interest of the public. Any costs of delays, incurred by these procedures, or changes in these procedures shall be deemed to be included in the contract prices bid and shall not be cause for additional compensation.

PROVISIONS FOR TRAVEL AND PROSECUTION OF WORK (Supplementing Subsection 8.03 of MassDOT's Standard Specifications)

Before starting any work under this Contract, the Contractor shall submit a Schedule of Operation, as provided in Section 8.02. This work schedule shall include a plan of his construction procedures, detours, and the traffic safety devices that will be used during the execution of the work as set forth in Subsection

850 of MassDOT's Standard Specifications.

Any area that the Contractor may require for storage of equipment and materials, or for other purposes necessary in the performance of the work, shall be secured by the Contractor at his own expense. Materials, including excavation intended for backfill, shall not be stored or stacked on roadway surfaces unless specifically permitted by the Engineer.

In general, the Contractor shall coordinate his work with the work to be done by the public utilities or other agencies and shall so schedule operations as to cause the least interruption to the normal flow of traffic. The Contractor may be required to temporarily suspend operations when such are considered by the Engineer to be a hindrance hazard to traffic.

The Contractor shall not proceed with surfacing operations without written approval of the Engineer. The Contractor shall provide for the removal of all material spilled from his trucks on existing pavement or other property over which it is hauled, or otherwise deposited thereon whenever, in the judgment of the Engineer, the accumulation is sufficient to cause the formation of mud or dust, or interfere with drainage or create a traffic hazard.

In case of damage to utilities, the Contractor shall promptly notify the Owner and shall, if requested, furnish manpower under the owner's direction in getting access to the utility. Pipes or other structures damaged by the operation of the Contractor may be repaired by the owner, either the municipality or the utility company. The cost of such repairs shall be borne by the Contractor without compensation.

The Contractor shall determine the exact location of all existing utilities before commencing work. The Contractor agrees to be fully responsible for all damages which might be occasioned by his failure to exactly locate and preserve any and all underground utilities. The Contractor shall include in his bid a sufficient allowance to cover the cost of any exploratory excavations that are needed to verify utility locations and accomplish all of the required work.

The Contractor shall be responsible for maintenance of flow in all water courses, drains, and other pipes in the way of the proposed work or for any conveyance of the flow to a suitable point of discharge in such a manner that there will be no flow upon or hindrance to other work or cause nuisance of any kind.

Roadways under construction shall remain open to local traffic at all times during the period of time required for the completion of the work, except when specifically directed otherwise by the City. At least one lane of traffic in each direction must be maintained at all times on all roads, and all existing turning movements must be maintained through construction. Pedestrian and vehicle access to all abutting properties shall be maintained except for very short periods of time for passing of active construction equipment and vehicles working in the immediate adjacent rights-of-way. When it is necessary to deny access to a property, the Owner shall be informed at least 48 hours in advance and alternative provisions made. **An accessible route for pedestrians shall be made available at all times and shall be properly maintained as such. The accessible route shall be equal to the distance of the route provided to able pedestrians.**

Facilities shall be provided by the Contractor for the safe and convenient passage of pedestrians and vehicles through the project. Particular care should be taken to establish and maintain methods and procedures that will not create unnecessary or unusual hazards to public safety. The placement of necessary devices will be for daily work periods and shall be removed after the completion of work operations.

All proposed utility work must be completed before roadway rehabilitation begins on a particular roadway. Roadway excavations must be squared-off at the end of each day and any open trenches shall be backfilled

and covered with steel plates. Backfilling and plating shall be considered incidental to the project and not be cause for additional compensation.

The Contractor may begin excavation at either end of the project but must continue from that end to the completion of the project. During non-working hours, no lateral drop-offs will be permitted within the area of excavation. The excavated areas shall be squared-off and ramped longitudinally at a rate of 12:1 or flatter to meet existing surfaces.

The City reserves the right to alter the lengths of excavation and other operations for the convenience of the traveling public and abutting property owners.

SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS (Supplementing Subsections 850.21 and 850.61 of MassDOT's Standard Specifications)

Unless otherwise provided for by specific items in this contract, furnishing safety controls for construction operations shall be considered incidental to this contract and the costs for safety controls shall be included in the various price for those contract items requiring such controls.

Positioning, adjusting and re-positioning of all devices such as traffic cones, drums, barricades, concrete barriers, high level warning devices, etc., not otherwise paid for under other items in this contract, is considered incidental and no separate payment will be made.

Signs having messages that are irrelevant to normal traffic conditions will be removed or properly covered at the end of each work period. Signs are to be kept clean at all times, and legends shall be distinctive and unmarred. The Contractor shall provide, place and erect all necessary barricades and warning signs and maintain adequate lights and illumination therefor. He shall be held responsible for all damage to the work due to any failure of signs and barricades needed to protect the work from traffic, pedestrians, or other causes.

Construction Signing and maintenance of Traffic will be paid for under Item 852.01.

TEMPORARY TRAFFIC CONTROL PLAN
Construction Staging and Scheduling

The Contractor shall prepare and submit to the Engineer and Library Director a proposed work schedule that complies with the plans and specifications. No work shall start until the Engineer's and Library Director's approval of the schedule is received.

The Contractor shall notify the City of Newton 14 calendar days before construction starts.

Materials, including excavation intended for backfill, shall not be stored or stacked on roadway surfaces unless specifically permitted by the Engineer.

General Provisions for Travel and Prosecution of Work

The contractor, as directed by the Engineer, is responsible for furnishing, erecting, and maintaining the signing of the roadways, and the proper removal of the signs upon the completion of the project. Compensation for signing will be provided under the provisions of Section 850 and under the respective items therein.

Reconstruction work on the project shall not commence until the staged construction signing and traffic barriers as described in the MUTCD have been installed and approved.

Particular care shall be taken to establish and maintain such methods and procedures as will not create hazards of an unusual nature. Access to abutting properties shall be maintained in a responsible and safe manner for the duration of the construction period.

The design and placing of all safety devices shall be with the approval of the Engineer. Payments of work and materials involved in providing adequate safety procedures shall be as specified in Section 850.

The Contractor shall carry on his work concurrently and in conjunction with the Utility Companies involved with the project so as to provide for all possible cooperation towards the satisfactory completion of the work with minimum delay and inconvenience. The Contractor shall be responsible for coordination of all utility work within the project limits.

Roadway excavation must be squared-off at the end of each day. At the end of each workday, any open utility trenches shall be backfilled and covered with steel plates. Backfilling and plating shall be considered incidental to the project and not be cause for additional compensation.

The Contractor shall be responsible for maintenance of flow in all water courses, drains and other pipes in the way of the proposed work or for any conveyance of the flow to a suitable point of discharge in such a manner that there will be no flow upon or hindrance to other work or cause nuisance of any kind.

Lowering of structures in areas of full-depth reconstruction shall be considered to be for the Contractor's convenience and not cause for additional compensation. Rebuilding and adjustment of such structures shall be measured and paid for under the appropriate pay items. The castings of all structures, which are required to be set or reset under this project, shall not be set complete in place to the final grade until after the bituminous concrete binder course has been completed and top course is scheduled to be completed within ten calendar days.

The Contractor shall order all materials and services required for the work immediately after the execution of the contract. The Contractor shall not start any operation until all materials required for the operation are at the site or until the Engineer is satisfied that the materials will be delivered in such order that there will be no interruption to continuous and efficient progress.

Roadways under construction shall remain open to local traffic at all times during the period of time required for the completion of the work except when specifically directed otherwise by the Engineer.

Reasonable facilities shall be provided by the Contractor for the safe and convenient passage of pedestrians and vehicles through project areas within the public right-of-way and where required by the Engineer at all times.

The placement of warning devices will be for daily work periods and shall be removed after the completion of work operations. Signs having messages that are irrelevant to normal traffic conditions will be removed or properly covered at the end of each work period. Signs are to be kept clean at all times and legends shall be distinctive and unmarred.

The Contractor shall take necessary precautions to avoid spillage from his trucks onto the traveled ways. Any material that may drop from the vehicles when being hauled over the street shall be removed immediately by the Contractor.

Sequence of Construction

It is the intent of these Special Provisions to minimize the construction impacts to the traveling public and abutting property owners by limiting the extent of roadway excavation and requiring the restoration of a

weather-tight pavement surface as stipulated in the plans and specifications. All proposed underground installations must be in place prior to the beginning of any roadway paving.

The Contractor shall as required or as directed by the Engineer to lower utility castings to ensure that any interim roadway condition is safe for the traveling public. The demolition, plating, and rebuilding of utility structures as required by interim conditions shall be considered incidental to the project and not cause for additional compensation.

The Contractor shall as required or as directed by the Engineer to provide temporary backfill to ensure that any interim sidewalk condition is safe for the traveling public and provides access to all abutters. Gravel may be used as temporary fill. The placement, compaction and subsequent removal of temporary fill as required by interim conditions shall be considered incidental to the project and not cause for additional compensation. Unless directed otherwise by the Engineer, temporary gravel sidewalk surfaces shall remain in place for no more than 7 calendar days, whereupon the temporary fill will be removed and replaced with the final sidewalk surface.

The intermediate course will be placed on completed base course sections when there is sufficient distance to permit efficient placement operations. Only after the entire project has been completed to intermediate course level shall the top course material be placed.

The Engineer reserves the right to alter the lengths of excavation and other operations in order to ensure the safety of the traveling public and abutting property owners.

General

The following general conditions will be followed unless otherwise directed by the Engineer:

- Except as permitted by the Engineer, during the day a minimum of one travel lane in each direction must be maintained at all times on Homer Street.
- At least one sidewalk on one side of the street shall remain open at all times.
- Pedestrian and vehicle access to all abutting properties shall be maintained except for very short periods of time. When it is necessary to deny access to a property, the owner shall be informed at least 48 hours in advance.
- Utility work shall be done prior to the roadway construction operations. The Contractor shall coordinate his work with the City and the utility companies.
- The Contractor shall coordinate his activities with construction operations that may be undertaken concurrently by others.
- Work involving fire hydrants shall be done in accordance with instructions of the City of Newton.
- Alternating fire hydrants shall be kept operative at all stages of the construction unless otherwise directed in writing by the Engineer. No fire hydrant shall be out of order for more than 12 hours.
- New streetlights shall be installed and activated prior to deactivating the existing street lights. Existing streetlights may be removed before the installation of new lights if so directed by the Engineer; however, temporary lights shall be installed to provide acceptable lighting levels as determined by the Engineer.
- No detouring of traffic from Homer Street shall be permitted without 72-hour advance approval by the City of Newton.

ENVIRONMENTAL CONTROLS

Contractor shall control all dirt, dust erosion and other related construction emissions from the project to the satisfaction of the City. Contractor shall comply with all applicable local, state and federal environmental regulations and permit requirements.

The Contractor shall clean and flush all affected drainage structures at the end of the work to the satisfaction of the engineer. The price associated with this work will be deemed incidental to the contract.

All construction equipment shall be fitted with suitable muffling devices so that the noise from construction operation shall be properly controlled. The Contractor shall control all dirt, dust erosion and other related construction emissions from the project to the satisfaction of the Engineer.

Calcium chloride for roadway dust control and/or water for roadway dust control shall be applied in accordance with Subsection 440 of MassDOT's Standard Specification at the direction of the Engineer. All costs in connection with the application of calcium chloride and/or water shall be included in the various payment items and no additional compensation will be made unless otherwise provided for by specific items in this contract.

EXCAVATION SUPPORT

Where the Work of the project requires installation of excavation support systems, the furnishing, installing, maintaining, and final removal as required shall be considered incidental to the item to which it pertains. Dewatering, when required, including disposal in accordance with State and Federal guidelines shall also be considered incidental.

TEMPORARY FENCE

Contractor shall erect temporary fencing as required to secure the work site for the purpose of public safety. The work shall include furnishing, installing, maintaining, removing, resetting, and final removal of fencing. The fence shall be used to close off the construction area from adjacent sidewalks and public ways, whose use conflicts with the construction activities. All work to furnish, install, relocate and remove temporary fencing shall be considered incidental to and no separate payment will be made.

TREE PROTECTION

Contractor shall provide temporary tree protection fence to protect existing trees, shrubs, and other plant materials located within the sidewalk and roadway construction as directed by the City. The work shall include furnishing, installing, maintaining, removing, resetting, and final removal of tree protection fence. The fence shall be used to protect individual trees within the construction activities. Fences and temporary fence posts shall be subject to the approval of the City. Fencing for individual plants shall be polyethylene fencing or chain link fence. Staking for individual tree protection fencing shall be 2x4 inch stock as directed and approved by the City. All work to furnish, install, and remove temporary tree protection fencing shall be paid for under Items 102.511 and 102.521.

DISPOSAL OF SURPLUS MATERIALS

All existing and other materials not required or needed for use on the project, and not required to be removed and stacked, shall become the property of the Contractor and shall be removed from the site during the construction period and legally disposed of. No separate payment will be made for this work, but all costs in connection therewith shall be included in the prices bid for various contract items.

MATERIALS REMOVED AND STACKED

Materials directed to be removed and stacked that is the property of the City, shall be removed, transported and stacked at the Department of Public Works yard at **52 Elliot Street in the Newton Highlands**. All materials shall be neatly stacked as directed by the City. In addition, all materials stacked shall be signed for by a City representative.

If the City's Representative determines that any portions of the stacked materials are unsuitable for re-use by the City or if other owners decide to abandon part or all of their materials, such materials shall become the property of the Contractor and he shall properly dispose of them off-site subject to the regulations and

requirements of local authorities governing the disposal of such materials, at no additional compensation.

CLEARING AND GRUBBING

No tree, including trees in clear & grub areas, shall be removed prior to receiving approval of the City of Newton. The removal of all trees shall be coordinated with the City of Newton prior to removal. The clearing and grubbing work shall be considered incidental to the Contract. No separate payment shall be made for clearing and grubbing.

TRAFFIC OFFICERS

Uniformed Traffic Officers will be required during the construction period. It shall be the responsibility of the Contractor to arrange for the necessary police details when approved by the City for each police detail required. This request and approval may be verbal or in writing at the discretion of the City. Forty eight hours' notice to the Police Department is required.

The City will pay the exact charges for police details ordered, with the approval of the Engineer, by the Contractor for this project. There will be no administrative fee, mark-ups, or any other additional costs paid to the Contractor.

If the Contractor fails to cancel any police detail not needed, by the required deadline, as set forth by the Newton Police Department, the cost for such detail as invoiced to the City shall be deducted from the total reimbursement to the Contractor, unless otherwise waived by the City. There will be no separate payment for the Contractor's coordination with the Police Department or City to obtain police details.

CITY OF NEWTON

CONSTRUCTION SPECIFICATIONS

ITEMS

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

METHOD OF AWARD

TO ENSURE CONTRACTOR ACCOUNTABILITY, THE OWNER INTENDS TO AWARD ALL ITEMS TO A SINGLE CONTRACTOR. ACCORDINGLY, CONTRACTORS MUST BID ON ALL ITEMS OF WORK, AND THE LOW BIDDER WILL BE THE CONTRACTOR WHOSE TOTAL BID PRICE IS THE LOWEST. THE BID QUANTITIES ARE NOT GUARANTEED, AND THEIR PRIMARY PURPOSE IS FOR THE DETERMINATION OF THE LOW BIDDER.

0.303DFC-A	Differential Fuel Costs for Asphalt	TON
0.303DFC-EXB	Differential Fuel Costs for Excavation and Backfill	CY
0.303DLA-A	Differential for Liquid Asphalt	TON
0.303DPC-C	Differential for Portland Cement	CY
102.1	Tree Trimming	FT
102.511	Tree Protection – Armoring and Pruning	EA
102.521	Tree and Plant Protection Fence	FT
120.1	Unclassified Excavation	CY
141.1	Test Pit for Exploration	CY
151.	Gravel Borrow	CY
158.	Temporary Access Drive	SY
170.	Fine Grading and Compacting – Subgrade Area	SY
201.	Catch Basin	EA
202.	Manhole	EA
203.	Manhole (6 Foot Diameter)	EA
222.3	Frame and Grate (or Cover) Municipal Standard	EA
223.1	Frame and Grate (or Cover) Removed and Stacked	EA
251.041	4 Inch Perforated High-Density Polyethylene Pipe (HDPE)	FT
251.06	6 Inch High-Density Polyethylene Pipe (HDPE)	FT
251.118	18 Inch High-Density Polyethylene Pipe (HDPE) Flared End	EA
251.121	12 Inch Perforated High-Density Polyethylene Pipe (HDPE)	FT
251.18	18 Inch High-Density Polyethylene Pipe (HDPE)	FT
403.	Reclaimed Pavement for Base Course and/or Sub-base	SY
450.23	SUPERPAVE Surface Course – 12.5 (SSC – 12.5)	TON
450.31	SUPERPAVE Intermediate Course – 12.5 (SIC – 12.5)	TON
461.	Porous Pavement	SF
472.	Temporary Asphalt Patch	TON
504.	Granite Curb Type VA4 – Straight	FT
504. 1	Granite Curb Type VA4 – Curved	FT
509.	Granite Transition Curb for Pedestrian Curb Ramps – Straight	FT
509.1	Granite Transition Curb for Pedestrian Curb Ramps – Curved	FT
580.	Curb Removed and Reset	FT
594.	Curb Removed and Discarded	FT

657.	Temporary Construction Fence	FT
697.1	Silt Sack	EA
697.3	Sedimentation Barrier	FT
701.	Cement Concrete Sidewalk	SY
701.1	Cement Concrete Sidewalk at Driveways	SY
701.2	Cement Concrete Pedestrian Curb Ramp	SY
707.8	Steel Bollard	EA
708.	Steel Bollard Removed and Reset	EA
748.	Mobilization	LS
751.	Loam Borrow	CY
756.	NPDES Stormwater Pollution Prevention Plan	LS
765.	Seeding	SY
799.	Landscaping	LS
804.15	1-1/2 Inch Electrical Conduit Type NM – Plastic – (UL)	FT
811.27	Electrical Handhole (Municipal Standard)	EA
812.09	Light Standard Foundation Precast	EA
813.3	Wire Type 7 NO. 10 General Purpose	FT
813.521	Wire Type 10 - #10 Grounding and Bonding	FT
813.72	Ground Rod 10 Feet Long	EA
823.01	Parking Lot Light Pole and Luminaire (Single)	EA
823.02	Parking Lot Light Pole and Luminaire (Double)	EA
823.03	Sidewalk Light Pole and Luminaire	EA
823.51	Photo Electric Control	EA
823.52	Multiple Control Contactor	EA
823.53	Time Clock	EA
823.71	Parking Lot Light Pole and Luminaire Removed and Discarded	EA
847.1	Sign Sup (N/Guide)+Rte Mkr w/1 Brkway Post Assem. – Steel	EA
852.01	Temporary Traffic Control	LS
864.041	Pavement Arrows and Legends Reflectorized White (Thermoplastic)	SF
866.104	4 Inch Reflectorized White Line (Thermoplastic)	FT
866.112	12 Inch Reflectorized White Line (Thermoplastic)	FT
874.2	Traffic Sign Removed and Reset	EA
874.4	Traffic Sign Removed and Stacked	EA
874.8	Miscellaneous Sign Removed and Reset	EA
999.	Police Details	ALL

ITEM 0.303DFC-A	DIFFERENTIAL FUEL COSTS FOR ASPHALT	TON
ITEM 0.303DFC-EXB	DIFFERENTIAL FUEL COSTS FOR EXCAVATION AND BACKFILL	CUBIC YARD

DESCRIPTION

The Contractor may elect NOT to bid the differential cost of fuels separately by inserting the term N/A (i.e., Not Applicable) in the entry line of Items 0.303DFC-A and 0.303DFC-EXB. This is a mandatory requirement to verify that the Contractor has formally waived their option to bid the cost of fuel(s) separately and has instead elected to factor the costs of fuel(s), into the separate respective bid price of Items.

Under this item the Contractor shall be paid for all the fuel(s) cost differentials consumed in the performance of the **Asphalt** and **Excavation and Backfill** components of this contract.

The intent of this program is to maintain a reasonable and continuous parity with the regional fluctuations that may occur in the cost of petroleum-based fuel products. It is important to note that due to the numerous types of; fuel, equipment, vehicles, programs, and efficiency factors related to each of these operational elements and therefore unique to the Contractor’s own enterprises, that any fuel adjustments made under this item are intended only to defray and offset extraordinary market trends in petroleum based fuel products.

IMPORTANT NOTE: An adjustment to the cost of fuels may result in an increase of payment if the fuel market has trended upward, or it may otherwise result in a decrease of payment if the fuel market has trended downward.

METHOD OF ADMINISTRATION

In accordance with Chapter 303 Acts of 2008, the City of Newton shall use the most current ‘new’ pricing of Diesel and Gasoline fuel as they are indicated on the MassDOT web site at the time of advertisement.

The **average** of these two values (Diesel & Gasoline) shall serve as the value basis for determining the **Base Price** of Fuel (BPF) at the time of the advertisement. Subsequently, during the course of the contract, the **Period Price** of Fuel (PPF) shall be determined in the same manner, but at the end of each calendar month, and if the **averaged** Period Price (PPF) has either increased or decreased by more than five percentage points (5%) relative to the **averaged** Base Price of Fuel (BPF), then the cost of fuel(s) for the applicable calendar month shall be paid for at the adjusted rate, otherwise the cost of fuel(s) for the applicable calendar month shall be paid for at the initial Base Price of Fuels.

When a cost adjustment is applied it shall be inclusive of the five (5%) variation.

Payments for fuel used for the **Asphalt** and **Excavation and Backfill** operation(s) shall be calculated at the end of **each calendar month** and they shall be based upon the acceptable **quantity of material supplied, delivered, installed, and/or disposed** within that particular (applicable) calendar month in which the work was performed. **(Program Note: In the event a continuous operation spans several days but the delivery & discharge of the material is performed in two separate months, then two separate fuel payments shall be made).**

At the end of each calendar month the Contractor shall furnish the Engineer with an accurate measured and tabular accounting which clearly shows the **collective number of material verified and applied/removed during that particular (applicable) calendar month.** The invoiced accounting shall bear the name of the

Contractor and Vendor and shall be surrendered to the DPW Agent-In-Charge immediately upon the termination of operations at the end of each calendar month. The City will have no obligation to pay for any errant invoice slips which are forwarded after the re-surfacing operations for the month have ceased.

No upward fuel adjustment will be made for any delivery and/or application related activity which takes place beyond the completion date of the contract unless the Contractor's work has been delayed due to no fault of their own (i.e. Preparation work that must be performed by others before the Contractor can complete their own tasks in the contractually allotted time.) Any such delay must be brought to the attention of the DPW Agent-In-Charge in a timely manner at which time the Agent shall investigate, verify, and document the extenuating circumstances and inform the Contractor of their decision.

MEASUREMENT AND PAYMENT

Payment formula:

- BPF** = The Base Price of Fuel on the bid release date (Averaged cost of Diesel & Gasoline in \$/Gallon).
PPF = The Period Price of Fuel for the applicable calendar month (Averaged cost of Diesel & Gasoline in \$/Gallon).
G/QTY = Gallons of fuel to supply, deliver, install, and/or dispose One (1) Unit of material (Gallons /Ton or Cubic Yard). These values are provided by MassDOT and are shown in the Item Sheet.
QTY = Total quantity of material supplied, delivered, installed, and/or disposed of in the applicable calendar month. (Ton or Cubic Yard)

If a change in (PPF) does not exceed +/- 5% relative to the (BPF) then: No differential adjustment.

If a change in (PPF) does exceed +/- 5% relative to the (BPF) then: $(PPF - BPF) \times G/QTY \times QTY =$ Differential Value for Current Pay Period (\$).

The differential value for cost of fuel(s) consumed for the **supply, delivery, installation, and/or disposal of one (1) unit of material(s)** shall be paid for under its corresponding **Item 0.303DFC-A** or **Item 0.303DFC-EXB** and shall be made in accordance with the applicable Period Price for Diesel & Gasoline fuels as posted for each calendar month in which the work was performed and as specified herein.

The Contractor shall be responsible for disbursing fuel cost adjustments to their subcontractors and/or to their vendors.

No payment shall be made for any fuel(s) consumed to remedy and/or to replace any deficient material supplied by the Contractor, subcontractors and/or their vendors.

DESCRIPTION

The Contractor may elect **NOT** to bid the differential cost of liquid asphalt separately by inserting the term **N/A** (i.e. *Not Applicable*) in **the entry line** of Item 0.303DLA-A. This is a **mandatory requirement** to verify that the Contractor has formally waived their option to bid the cost of fuel(s) separately and has instead elected to factor the costs of fuel(s), into the separate respective bid price of Items.

Under this item a differential value shall be calculated and applied to the payment on a monthly basis. The differential value shall be based upon the amount of Liquid Asphalt contained in the total number of **tons of asphalt** supplied, delivered and installed in each respective calendar month.

Item 0.303DLA-A is to provide a structured means, whereby the cost of the Liquid Asphalt contained in **asphalt** is evaluated each calendar month, and under certain market conditions this value is adjusted **either upward or downwards** to maintain a reasonable and continuous parity with the regional fluctuations that may occur in the price of this commodity.

IMPORTANT NOTE: An adjustment to the cost of the Liquid Asphalt component may result in an **increase of payment** if the market has trended upward, or it may otherwise result in a **decrease of payment** if the market for Liquid Asphalt has trended downward. Further, these adjustments **do not** compensate the Contractor for the entire cost of the compound(s) consumed in the execution of this contract **but only** for the monthly differential value(s) which may occur with regard to the Liquid Asphalt component.

METHOD OF ADMINISTRATION

In accordance with Chapter 303 Acts of 2008 the City of Newton shall use the most current 'new' pricing for **Liquid Asphalt** as indicated on the MassDOT web site at the time of advertisement.

The value at the time of advertisement shall serve as the Base Price of Liquid Asphalt (BPLA). Subsequently, and during the course of the contract, the Period Price of the Liquid Asphalt (PPLA) component shall be determined in the same manner and at the end of each respective calendar month, and if the Period Price (PPLA) has either increased or decreased by more than five percentage points (5%) relative to the Base Price (BPLA) index, then the differential cost of the Liquid Asphalt component shall be paid for at the adjusted rate, otherwise no adjustment shall be made.

The Contractor is advised to verify these value standards and citations prior to placing their bid.

The differential value for the Liquid Asphalt component shall be calculated at the end of each calendar month and it shall be based upon the number of acceptable **tons of asphalt** supplied, delivered and installed within that particular calendar month. This value shall be derived by applying a fixed factor to the tonnage of Liquid Asphalt that is contained in a single **ton of asphalt**. (**Program Note: In the event a continuous delivery & application operation spans several days but is performed in two separate months, then two separate Liquid Asphalt calculations shall be made.**)

When a cost differential is applied it shall be inclusive of the five (5%) variation.

Immediately upon delivery, and subsequently upon the final installation of material at day's end, the Contractor shall furnish the Engineer with an invoice that clearly indicates the amount of **asphalt** that was

applied. The invoice shall clearly show the **tare weight, type of asphalt and the date of delivery & discharge** for each **application of asphalt** which is ultimately delivered and discharged. The plant issued tare/weight invoicing slips are to bear the name of the vendor and shall **be surrendered to the DPW Agent-In-Charge immediately upon the delivery of the material. The City will have no obligation to pay for any errant slips which are forwarded after the delivery vehicle has exited the project site.**

No upward Liquid Asphalt component adjustment will be made for any material which is applied beyond the completion date of the contract unless the Contractor's work has been delayed due to no fault of their own (i.e. Preparation work that must be performed by others before the Contractor can complete their own tasks in the contractually allotted time). Any such delay must be brought to the attention of the DPW Agent-In-Charge in a timely manner at which time the Agent shall investigate, verify, and document the extenuating circumstances and inform the Contractor of their decision.

MEASUREMENT AND PAYMENT

Payment formula:

BPLA = The Base Price Liquid Asphalt Cost Index on the bid release date (\$/Ton of Liquid Asphalt)
PPLA = The Period Price for One Ton of Liquid Asphalt for the applicable calendar month in which it was delivered (\$/Ton of Liquid Asphalt)
TA = Total tons of asphalt applied in the applicable calendar month (Tons)
The percentage of Tons of Liquid Asphalt in One (1) ton of asphalt shall be determined by the Contractor's formula submittal.

If a change in (PPLA) does not exceed +/- 5% relative to the (BPLA) then: No differential adjustment.

If a change in (PPLA) exceeds +/- 5% relative to the (BPLA) then:

**(PPLA - BPLA) x TA x (percentage to be determined by the Contractor's formula submittal)x RAP Factor =
Differential Value for Current Pay Period (\$).**

Under **Item 0.303DLA-A** the differential value for **Liquid Asphalt contained in One (1) ton of asphalt** used to complete the work under this contract shall be made in accordance with the Period Price index values for Liquid Asphalt posted for each calendar month in which the work was performed and relative to the Base Price as specified herein. Subsequently these values shall be factored in accordance with the above-noted formula.

The differential value for Liquid Asphalt shall be based upon a fixed mean value of a percentage to be determined by the Contractor's formula submittal per Ton of Liquid Asphalt contained in One (1) ton of asphalt, with said value differential being factored only on the quantity actually used, verified and/or accepted by the Engineer.

No adjustment shall be made for any material which is rejected or is deemed to be of an inferior quality. Nor shall any adjustment be made for Liquid Asphalt contained in any **asphalt** material(s) which are used to remedy any deficient work which was initially performed by the Contractor and/or vendor under this contract, and which is proven to be deficient and/or of inferior quality during and/or subsequent to discharge.

The Contractor shall be responsible for disbursing the Liquid Asphalt cost adjustments to their subcontractors and/or to their vendors.

**ITEM 0.303DPC-C DIFFERENTIAL COST FOR PORTLAND CUBIC YARD
CEMENT**

DESCRIPTION

The Contractor may elect NOT to bid price adjustment of Portland Cement separately by inserting the term N/A (i.e., *Not Applicable*) in the entry line of Item 0.303DPC-C. This is a mandatory requirement to verify that the Contractor has formally waived their option to bid the cost price adjustment separately and has instead elected to factor the costs into the separate respective bid price of Items.

Under this item a differential value shall be calculated and applied to the payment on a monthly basis. The differential value shall be based upon the amount of Portland cement contained in the total number of **cubic yards of concrete** supplied, delivered and installed in each respective calendar month.

Item 0.303DPC-C is to provide a structured means, whereby the cost of the Portland Cement contained in **concrete** is evaluated each calendar month, and under certain market conditions this value is adjusted **either upward or downwards** to maintain a reasonable and continuous parity with the regional fluctuations that may occur in the price of this commodity.

IMPORTANT NOTE: An adjustment to the cost of the Portland Cement may result in an increase of payment if the market has trended upward, or it may otherwise result in a decrease of payment if the market for Portland Cement has trended downward. Further, these adjustments do not compensate the Contractor for the entire cost of the compound(s) consumed in the execution of this contract but only for the monthly differential value(s) which may occur with regard to the Portland Cement component.

METHOD OF ADMINISTRATION

In accordance with Chapter 303 Acts of 2008 the City of Newton shall use the most current 'new' pricing for **Portland Cement** as indicated on the MassDOT web site at the time of advertisement.

The value at the time of advertisement shall serve as the Base Price of Portland Cement (BPPC). Subsequently, and during the course of the contract, the Period Price of the Portland Cement (PPPC) component shall be determined in the same manner and at the end of each respective calendar month, and if the Period Price (PPPC) has either increased or decreased by more than five percent (5%) relative to the Base Price (BPPC) index, then the differential cost of the Portland Cement component shall be paid for at the adjusted rate; otherwise, no adjustment shall be made.

The Contractor is advised to verify these value standards and citations prior to placing their bid.

When a cost differential is applied, it shall be inclusive of the five percent (5%) variation.

Immediately upon delivery and subsequently upon the final installation of material at day's end, the Contractor shall furnish the Engineer with an invoice that clearly indicates the amount of **concrete** that was applied. The invoice shall clearly show the **cubic yardage, type of concrete mix, and the date of delivery & discharge** for each **application of concrete** that is ultimately delivered and discharged. The plant issued invoicing slips are to bear the name of the vendor and shall **be surrendered to the DPW Agent-In-Charge**

immediately upon the delivery of the material. The City will have no obligation to pay for any errant slips that are forwarded after the delivery vehicle has exited the project site.

No upward cement concrete component adjustment will be made for any material that is applied beyond the completion date of the contract unless the Contractor's work has been delayed due to no fault of their own (i.e., Preparation work that must be performed by others before the Contractor can complete their own tasks in the contractually allotted time). Any such delay must be brought to the attention of the DPW Agent-In-Charge in a timely manner, at which time the Agent shall investigate, verify, and document the extenuating circumstances and inform the Contractor of their decision.

MEASUREMENT AND PAYMENT

Payment formula:

BPPC = The Base Price Portland Cement on the bid release date (\$/CY of Portland Cement Concrete)

PPPC = The Period Price for Portland Cement for the applicable calendar month in which it was delivered (\$/CY of Portland Cement)

TC = Total volume of Portland Cement in the applicable calendar month (CY)

The cost of Portland Cement in One (1) cubic yard of concrete shall be determined by the Contractor's formula submittal.

If a change in (PPPC) does not exceed +/- 5% relative to the (BPPC) then: No differential adjustment.

If a change in (PPPC) exceeds +/- 5% relative to the (BPPC) then:

**(PPPC - BPPC) x TC x (percentage to be determined by the Contractor's formula submittal) =
Differential Value for Current Pay Period (\$).**

Under **Item 0.303DPC-C** the differential value for **Portland Cement contained in One (1) cubic yard of concrete** used to complete the work under this contract shall be made in accordance with the Period Price index values for Portland Cement posted for each calendar month in which the work was performed and relative to the Base Price as specified herein. Subsequently these values shall be factored in accordance with the above-noted formula.

No adjustment shall be made for any material which is rejected or is deemed to be of an inferior quality. Nor shall any adjustment be made for Portland Cement contained in any **concrete** material(s) which are used to remedy any deficient work which was initially performed by the Contractor and/or vendor under this contract, and which is proven to be deficient and/or of inferior quality during and/or subsequent to discharge.

The Contractor shall be responsible for disbursing the Portland Cement cost adjustments to their subcontractors and/or to their vendors.

The Price Adjustment will be based on the variance in price for the Portland Cement component only from the Base Price to the Period Price. It shall not include transportation or other charges.

The price adjustment applies only to the actual Portland Cement content in the mix placed on the job in accordance with the Standard Specifications for Highways and Bridges, Division III, Section M4.02.01. No adjustments will be made for any cement replacement materials such as fly ash or ground granulated blast furnace slag.

The work under this item shall conform to the relevant provisions of Sections 8.08 and 101 of the Standard Specifications and the following:

GENERAL

The work shall include the trimming of hanging tree limbs, branches, and bushes within the right-of-way that may conflict with the installation of parking lot light posts and fixtures and to provide clear lighting of proposed parking lot lighting as directed by the Engineer and City.

The trees to be trimmed shall be determined by the City Tree Warden and all work shall be done to the satisfaction of the City. Approximate locations will be designated in the field by the City.

The Contractor is responsible for the protection of all existing trees and plants within and immediately adjacent to the construction area that are not designated to be trimmed.

Incidental to the cost of this item, the Contractor shall retain the services of a Massachusetts certified arborist, who shall make recommendations as to the specific appropriate treatment of trees within or near the work zone.

SUBMITTALS

All tree trimming work will be performed by a Massachusetts Certified Arborist. Prior to start of work, the Contractor shall submit to the City the name and certification number of the Massachusetts Certified Arborist referenced herein. Cost for Certified Arborist for all activities pertaining to this item shall be incidental to this item.

CUTTING AND PRUNING

The Contractor shall retain the services of the Massachusetts State Certified Arborist to oversee any cutting of limbs. All cuts shall be clean and executed with an approved tool. Under no circumstances shall pruning be performed with mechanical equipment that might damage the remaining trees.

TREE DAMAGE

The Contractor shall be held responsible for the health and survival of the existing trees and bushes in the immediate vicinity of the construction area. Damage that, in the City'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 City's discretion, be replaced per the requirements under the heading of Preservation of Roadside Growth of these Special Provisions. Cost of replacement of trees shall be borne by the Contractor.

BASIS OF PAYMENT

Work under this item shall be paid at the Contractor bid price per Foot under Item 102.1. This shall include full compensation for all labor, equipment, materials, and incidental for the satisfactory completion of the work, including the services of a certified arborist, water and fertilizer and the subsequent removal and satisfactory disposal of the tree and bush trimmings.

The work under this item shall conform to the relevant provisions of Section 771 of the Standard Specifications and the following:

GENERAL

The work shall include furnishing and installation of temporary tree trunk protection and limb pruning to prevent injury to the tree from construction equipment and activities. Trunk armoring is for instances where construction activity (the use of heavy equipment) comes close enough to potentially damage the tree trunk or limbs. It shall be used where shown on the plans and as required by the City.

MATERIALS

Trunk armoring shall be such that it prevents damage to the trunk from construction equipment. Selected materials shall be such that installation and removal will not damage the trunk.

Acceptable materials include 2x4 wood cladding with wire or metal strapping, or, for instances when duration of construction activities is less than three months, corrugated plastic pipe mounted with duct tape. Height of cladding shall be from base of tree (including root flare) to the bottom of the first branch or as recommended by the Engineer. Materials and methods shall be approved by the Engineer.

METHODS OF WORK

Prior to construction activities, the Engineer, the Contractor and the City Tree Warden shall review trees noted on the plans to be protected. Final decision as to trees armored and/or pruned shall be per the Engineer.

Care shall be taken to avoid damage to the bark during installation and removal of armoring. Trunk armoring shall be replaced and maintained such that it is effective for as long as required and shall be removed immediately upon completion of work activities adjacent to trees.

Pruning of limbs shall conform to the techniques and standards of the most recent ANSI A300 standards.

DAMAGES & PENALTIES

In the event that trees designated for protection under this item are damaged, including root damage from unapproved trespassing onto the root zone, the Contractor shall, at his own expense obtain an Arborist. The Arborist shall be approved by the City.

If, based on the recommendations of the Arborist, the Engineer determines that damages can be remedied by corrective measures, such as repairing trunk or limb injury, soil compaction remediation, pruning, and/or watering, the damage will be repaired as soon as possible within the appropriate season for such work and according to industry standards.

If the Engineer determines that damages are irreparable, the Contractor shall pay for the damages in the amount of \$500.00 per diameter inch at breast height (DBH) per tree.

Additionally, if the Engineer determines that the damages are such that the tree is sufficiently compromised as to pose a future safety hazard, the tree shall be removed. Tree removal will include clean-up of all wood parts, grinding of the stump to a depth sufficient to plant a replacement tree or plant, removal of all chips from the stump site, and filling the resulting hole with topsoil.

SUBMITTALS

Incidental to this item, the Contractor shall provide to the Engineer one (1) copy American National Standards Institute (ANSI) Standard Z-133.1 and A300 Standard Practices for Tree, Shrub, and Other Woody Plant Maintenance, Part 1: Pruning. These references shall be kept by the Engineer at his office for the length of the Contract.

Prior to start of work, the Contractor shall submit to the Engineer the name, certification number and resume of the Massachusetts Certified Arborist referenced herein. Cost for Certified Arborist for all activities pertaining to this Item shall be incidental to this item.

Submit arborists report documenting site walk and summarizing trees protected (species and quantities) as well as recommendations for protection.

MATERIALS

Fence and temporary fence posts shall be subject to the approval of the Engineer.

Fencing for individual plants shall be polyethylene fencing or chain link fence (new or used).

Staking for individual tree protection fencing shall be steel posts or 2 in. x 4 in. lumber as directed and approved by the Engineer.

Wood chips shall conform to provisions of Wood Chip Mulch under Materials Section M6.04.3.

Trunk protection shall be 2 in. x 4 in. cladding, at least 8 feet in length, clad together with wire. Alternative materials shall be at the approval of the Engineer. Alternative materials shall provide adequate protection from anticipated construction activities and shall not injure or scar trunk. Trunk protection shall include burlap to separate trunk cladding from bark.

Temporary Tree Protection Fence shall be brightly colored polypropylene barricade or wooden snow fencing for tree protection or safety fencing as shown on the Contract drawings or as directed by the Engineer. Fencing shall be a minimum of 4 feet high and supported by steel or hardwood stakes spaced at a maximum of 8 feet on center or by other means acceptable to the Engineer. Fencing shall be materials and fastenings sufficient to provide sturdy and highly visible separation of the construction activities from the trees and existing plantings to be preserved

Incidental to this item, the Contractor shall provide water for maintaining plants in the construction area that will have exposed root systems for any period during construction.

CONSTRUCTION METHODS

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 Tree Protection – Armoring and Pruning as specified herein.

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.

To the extent possible, temporary landscaped fencing shall be installed at the limit of tree canopy and shall be staked and maintained vertical for the length of the contract.

Where excavation within canopy is unavoidable, the Contractor shall use equipment and methods that shall minimize damage to the tree roots, per recommendations of the Certified Arborist. Such methods may require root pruning prior to, as well as during, any excavation activities.

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 necessary during the duration of the contract at no additional cost.

Cutting and Pruning

Some pruning of roots and branches may be a necessary part of construction. Pruning will be performed on the same side of the tree that roots have been severed.

The Contractor shall retain the services of a Massachusetts State Certified Arborist to oversee any cutting of limbs, stem or roots of existing trees. All cuts shall be clean and executed with an approved tool. Under no circumstances shall excavation in the tree protection area be made with mechanical equipment that might damage the existing root systems.

Any tree root area exposed by construction shall be covered and watered immediately. Exposed tree roots shall be protected by dampened burlap at all times until they can be covered with soil.

Watering

Water each tree within the construction area where work is in progress twice per week until the surrounding soil of each tree is saturated for the duration of construction activities.

Removal of Protection

After all other construction activities are complete, but prior to final seeding, wood chips, temporary fencing, branch protection, and trunk protection materials shall be removed and disposed of off-site by the Contractor at no additional cost.

Tree Damage

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 by the Contractor with new plants of comparable size and type. Cost of replacement trees shall be borne by the Contractor.

BASIS OF PAYMENT

Where construction disturbance, such as grading activities, will occur within the limits of the canopy of groups of trees, these trees shall be protected and paid for under Item 102.521, Tree and Plant Protection Fence.

Payment under this item shall be scheduled throughout the length of contract: 30 percent of value shall be

paid upon installation, 30 percent approximately halfway through the contract, and the remainder to be paid at the end of the contract after completion of construction operations that would disturb plants and after the protection materials have been removed and properly disposed of off-site by the Contractor.

Submittal of arborist's report is incidental to and required for payment of this item.

Tree and Plant Protection Fence will be paid for at the Contract Unit Price per Foot under Item 102.521, which shall include full compensation for all labor, equipment, materials, and incidentals necessary for the satisfactory completion of the work, including the services of a certified arborist, water and fertilizer, and the subsequent removal and satisfactory disposal of the protective materials upon completion of the Contract.

Cost of wood chips, as required, shall be incidental to this item.

ITEM 120.1 UNCLASSIFIED EXCAVATION CUBIC YARD

The work to be done under this Item shall consist of removing and disposing in accordance with the relevant provisions of Section 120, all the materials obstructing the execution of required work, as shown on the plans and as directed, except for those materials for which payment is made inclusive with work specified to be performed under other items of this Contract.

GENERAL

The work shall include the removal and satisfactory disposal of rubbish, debris, and other items not being reused, such as cement concrete sidewalks, concrete posts and fences, unused electric conduit and hand holes, and unsuitable frames, grates, covers, fences, sign posts, bollards, and other materials that cannot be reused in the judgment of the City and are unsuitable for salvage, and all other materials not classified and paid for under other items.

CONSTRUCTION METHODS

Edges of excavations made in existing pavements shall be squared by sawcutting with power-driven tools to provide a neat, clean edge for joining new pavement. Ragged, uneven edges shall not be acceptable. Pavement areas which have been broken or undermined shall be edged neatly with minimum disturbance to remaining pavement.

In the event that roadway patching is needed as deemed so by the Engineer, the areas shall be saw-cut to the extents as directed by the Engineer and removed to a depth of four (4) inches. The remaining subbase shall be trimmed, fine graded, and compacted as part of this item. Any additional gravel needed shall be paid for under Item 151. Gravel Borrow. Any handwork necessary shall be considered part of the work of this section.

Before starting any excavation, the Contractor shall field check and verify all utilities, vaults, septic systems, sprinkler systems, and other sub-surface features in the project area and be sure that the excavation will not disturb or damage such features. The Contractor will coordinate his construction activities with the owners of such features and obtain approval or permits, if necessary, prior to starting the excavation. Any damage to sub-surface features during the construction process will be the responsibility of the Contractor and will be repaired by the Contractor at his own expense. If the owner so wishes, he will repair the damage himself and bill the Contractor for his expenses.

Removal of castings, lowering and plating of structures shall also be considered part of the work of this section.

ITEM 151.**GRAVEL BORROW****CUBIC YARD**

The work to be performed under this item shall conform to the relevant provisions of Section 150 of the Standard Specifications and the following:

GENERAL

This work shall consist of furnishing and placing Gravel Borrow for the subbase material in areas of full-depth pavement reconstruction, sidewalk, pedestrian curb ramps, and other fill areas as directed by the City. Material shall be supplied by the Contractor where necessary for replacing unsuitable material encountered during all aspects of construction. Gravel Borrow used to replace unsuitable material shall be paid for only as requested and directed by the City prior to installation.

SUBMITTALS

A minimum of thirty (30) days prior to the start of any construction activity, the contractor shall submit the gravel gradation to the City for review and approval.

MATERIALS

Gravel borrow shall be supplied graded as designated on the construction plans. In the event that gravel borrow is requested to replace unsuitable material, gravel borrow shall conform to the Standard Specifications Section M1.03.0 Type B.

Gravel Borrow shall be placed with a maximum lift thickness of 6 inches. Where required, trenches shall be backfilled with approved granular materials and properly compacted to a minimum density of 90 percent of the maximum density as determined by ASTM D1557 (Modified Proctor). All other gravel areas shall be compacted to a minimum density of 95 percent of the maximum density. Any settlements or other defective work and material shall be promptly repaired or replaced at the Contractor's expense. The density of the compacted fill shall be determined by the ASTM D6938 Nuclear Method or latest ASTM standard.

The shaping, trimming, compacting and finishing of the surface of the subgrade, the grading and finishing of all unpaved areas, and the preparation of all areas for topsoil, loam, slopes, and sidewalk/roadway paving shall be made in close conformance with the lines, grades, dimensions and design shown on the plans, as described in the Field Engineering section of the General Requirements of these specifications, or as required by the Engineer.

BASIS OF PAYMENT

Work under this item shall be paid at the Contractor bid price for Item 151. Gravel Borrow per Cubic Yard. Such payment shall include full compensation for all material, labor, tools, equipment, materials and any incidentals necessary for the satisfactory completion of the work as described above.

ITEM 158.**TEMPORARY ACCESS DRIVE****SQUARE YARD****DESCRIPTION**

Work under this item shall conform to the relevant provisions of Subsection 150 of the MassDOT Standard Specifications and the following:

GENERAL

The Work shall include constructing, using, and removing a temporary access drive for entry or egress to the site as shown on the plan and as directed by the City.

The Contractor shall coordinate with the City and Library's representative for approval prior to constructing the temporary access drive.

The stabilized construction entrance shall consist of a six (6) inch compacted 1-1/2" double washed stone where shown on the plans.

The composite tracking pads shall be made of Ultra-High-Molecular-Weight Polyethylene (UHMWPE) may be used in place of crushed stone and filter fabric if approved by the City. Pad shall be FODS TCM Model #1100 or approved equal.

The Contractor shall submit shop drawing to the City for review and approval prior ordering.

CONSTRUCTION METHODS

The temporary driveway shall be excavated or filled with 6" of compacted 1.5" double washed stone for access to the site to prevent the off-site transport of sediment by construction vehicles. The stone pad will be at least 50 feet long and 18 feet wide and as directed by the City. The stabilized exit will be installed as soon as feasible following the excavation of the full-depth area of the lot and shall remain in place until the subgrade has been fine graded and compacted.

BASIS OF PAYMENT

Work under this item shall be paid at the Contractor bid price per Square Yard under Item 158., which payment shall include full compensation for all labor, equipment, materials, and incidentals for the satisfactory completion of the work includes constructing temporary access drive complete in place, maintain, replace and including preparatory excavation and the disposal of excess material(s), and for the furnishing of 1.5" double washed stone, filter fabric, and composite tracking pads if used. The unit price shall include full compensation for all labor, materials, tools, equipment, and all incidentals necessary to complete the work under this Item as shown on the plans and as directed by the City and as specified herein.

ITEM 170. FINE GRADING AND COMPACTING - SUBGRADE AREA SQUARE YARD

The work to be performed under this item shall conform to the relevant provisions of Section 170 of the Standard Specifications and the following:

GENERAL

This work shall consist of grading and compacting for the subbase material in areas of full-depth pavement reconstruction, porous pavement, sidewalk, pedestrian curb ramps, and as directed by the City.

CONSTRUCTION METHODS

All areas consisting of existing subbase, newly placed subbase, or any other location where fine grading and compaction is necessary, or directed by the Engineer, prior to the installation of top or finish courses shall be thoroughly fine graded and compacted to provide a neat, clean surface for the installation of new materials.

The shaping, trimming, compacting and finishing of the surface of the subgrade, the grading and finishing of all unpaved areas, and the preparation of all areas for topsoil, loam, slopes, and sidewalk/roadway paving shall be made in close conformance with the lines, grades, dimensions and design shown on the plans, as described in the Field Engineering section of the General Requirements of these specifications, or as required by the Engineer.

BASIS OF PAYMENT

Work under this Item shall be paid at the Contract bid price for Item per Square Yard for Item 170. Fine Grading and Compacting – Subgrade Area, which price shall include all labor, materials, equipment, compaction and testing necessary to complete the work of this Item. The removal and disposal of material below subgrade will be paid for under Item 120.1 Unclassified Excavation.

ITEM 201.	CATCH BASIN	EACH
ITEM 202.	MANHOLE	EACH
ITEM 203.	MANHOLE (6 FOOT DIAMETER)	EACH

Work to be done under these items shall conform to the relevant provisions of Section 201 of the Standard Specifications and the following:

GENERAL

This work shall consist of furnishing and installing new catch basins and manholes where shown on the plans.

Drop inlets shall be utilized where obstructions prevent the use of standard catch basins or as directed by the City.

All catch basins shall be provided with a four foot deep sump.

New catch basins, manhole, and gutter inlet shall be as shown on the City of Newton General Construction Details. Gas trap as shown on detail shall be provided. No separate payment will be made for the additional depth of excavation or cost of the structure, but all costs in connection therewith shall be included in the Contract unit price bid.

Steps shall be provided as shown on detail.

Catch basins and manhole shall be placed on not less than 12 inches of crushed stone and shall be paid separately under Item 156. Crushed Stone.

Upon completion of final paving, all catch basins must be cleaned as directed by the City. Payment for cleaning the structures shall be considered incidental to the catch basins item.

BASIS OF PAYMENT

Work under these items shall be paid at the Contractor bid price per Each under Item 201. Catch Basin, Item 202. Manhole, and Item 203. Manhole (6 Foot Diameter) respectively, which include full compensation for all labor, equipment, materials, excavation and bracing, dewatering as required, 6 inches of crushed stone bedding, pre-cast concrete drainage structures, steps, gaskets, bitumastic coating, pipe connections are included in the cost of the structure and new pipe sections shall be connected to existing piping as required and in the correct size, backfill, compaction, incidental cement concrete, cement mortar, and any incidentals needed to complete the structure as specified.

Payment for sawcutting relative to these items shall be considered incidental to respective items. No separate payment will be made for sawcutting. Payment for crushed stone shall be paid separately under Item 156. Crushed Stone. Payment for manhole frame and cover and catch basin frame and grate shall be paid under Item 222.3.

ITEM 222.3 FRAME AND GRATE (OR COVER) MUNICIPAL STANDARD EACH

Work to be done under this item shall conform to the relevant provisions of Sections 201 and 220 and the following:

GENERAL

This work shall consist of furnishing and installing new frame and grate or covers for new structures in locations as shown in the plans or as directed by the City.

MATERIALS

Frame, grates and covers shall be manufactured with North American steel and produced by EJ Iron Works as approved by the City of Newton.

The Contractor shall submit shop drawings to the City for review and approval prior ordering.

Manhole covers shall be as shown in the City of Newton General Construction Details and the appropriate word "DRAIN", "SEWER", "WATER" cast into the cover.

CONSTRUCTION METHOD

Castings shall be set, as directed by City, so that final grade of the manhole cover or catch basin grate is flush with the final course of hot mix asphalt pavement. Casting frames shall be set in a full mortar bed with bricks, a maximum of 8 inches thick. All casting shall be set in a full concrete collar.

BASIS OF PAYMENT

Work under this Item shall be paid at the Contractor bid price per Each for Item 222.3 Frame and Grate (or Cover) Municipal Standard, which shall include full compensation for labor, equipment, tools, disposal of existing covers and grates as directed by the City, and any incidentals necessary for the satisfactory completion of the work as specified.

ITEM 223.1 FRAME AND GRATE (OR COVER) REMOVED AND STACKED EACH

Work to be done under this item shall conform to the relevant provisions of Sections 201 and 220 and the following:

GENERAL

This work shall consist of removing and stacking existing frames and grates or covers that will not be used within the project limits as directed by the City.

Frame and grates or covered to be removed and stacked is to be delivered and stacked at the City DPW facility located at 110 Crafts Street, Newton MA.

BASIS OF PAYMENT

Work under this item shall be paid at the Contractor bid prices per Each for Item 223.1 Frame and Grate (or Cover) Removed and Stacked, which price shall include full compensation of all labor, materials, equipment, dismantling, removing, transporting, and stacking of the casting, and all incidental costs required to complete the work. Any castings to be discarded as determined by the City shall be disposed by the Contractor; this work shall be considered incidental to this item.

ITEM 251.041	4 INCH PERFORATED HIGH-DENSITY POLYETHYLENE PIPE (HDPE)	FEET
ITEM 251.06	6 INCH HIGH-DENSITY POLYETHYLENE PIPE (HDPE)	FEET
ITEM 251.118	18 INCH HIGH-DENSITY POLYETHYLENE PIPE (HDPE) FLARED END	EACH
ITEM 251.121	12 INCH PERFORATED HIGH-DENSITY POLYETHYLENE PIPE (HDPE)	FEET
ITEM 251.18	18 INCH HIGH-DENSITY POLYETHYLENE PIPE (HDPE)	FEET

Work to be performed under this item shall conform to the relevant provisions of Section 230 of the Standard Specifications and the following:

GENERAL

The work under these Items shall consist of the furnishing and installing of 6-inch and 18-inch high-density polyethylene (HDPE) pipe; 18-inch high-density polyethylene (HDPE) pipe flared end; and 4-inch and 12-inch perforated high-density polyethylene (HDPE) pipe, fittings, and appurtenances as shown on the plans or as directed by the City.

MATERIALS

High-density polyethylene pipe shall comply with ASTM 3350.

SUBMITTALS

The Contractor shall submit the shop drawings for all pipes, couplings, fittings, and flared ends to the City for review and approval prior to ordering.

CONSTRUCTION METHODS

HDPE pipe shall be placed on no less than 6 inches of crushed stone, as shown on the plans and as directed by the City. Payment for crushed stone bedding and surrounding pipes shall be paid under Item 156.

All molded fittings and fabricated fittings shall be fully pressure rated to match the pipe SDR pressure rating to which they are made. All fittings shall be molded or fabricated by the manufacturer. No Contractor-fabricated fittings shall be used unless approved by the City.

All fittings shall be installed using butt-fused fittings, thermos-fused fittings/couplings, or flanged adapters and must be approved by the City.

All fittings shall be included in the unit price under the respective pipe items and no additional payment shall be made.

High-density polyethylene pipe shall be installed in accordance with the instruction of the manufacturer.

Sawcutting and temporary hot mix asphalt patching made in existing pavement for trench limits for drainage work will be included in the unit price under the respective pipe items and will not be paid for separately other items.

BASIS OF PAYMENT

Work under these items shall be made at the contract unit prices per Foot for Item 251.041 4 inch perforated High-Density Polyethylene Pipe (HDPE), Item 251.06 6 inch High-Density Polyethylene Pipe (HDPE), Item 251.121 12 inch perforated High-Density Polyethylene Pipe (HDPE), and Item 251.18 18 inch High-Density Polyethylene Pipe (HDPE) and Item 251.181 18 inch High-Density Polyethylene Pipe (HDPE) flared end per Each. Such payment shall be considered full compensation for excavation, backfill,

ITEM 450.23	SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5)	TON
ITEM 450.31	SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC - 12.5)	TON

Work under these items (including incidentals for Asphalt Emulsion for Tack Coat and/or Joint Sealant) shall conform to the relevant provisions of Section 450 of the MassDOT Standard Specifications and the following:

GENERAL

The work shall include the furnishing and placement of superpave surface course and intermediate course for new pavements by self-powered mechanical pavers. The Contractor shall apply the thickness for each pavement course as shown on the plans or as directed by the City.

The PGAB Grade selected for this Contract is **PG 64-28**. The emulsion under this specification shall be Grade RS-1H and shall meet the requirements of AASHTO M 140.

All required sawcutting in the existing pavement shall be done in accordance with Section 450 of MassDOT’s Standard Specifications and shall be incidental to these contract Items.

SUBMITTALS

Prior to the start of any construction activity, the contractor shall submit the hot mix asphalt job mix formula (JMF) to the City for review and approval.

MATERIALS

Material shall meet the requirements specified in Section 450 of the MassDOT Standard Specifications.

CONSTRUCTION METHOD

Prior to placing the SUPERPAVE pavement over the previous course, the Contractor shall spread suitable asphalt emulsion tack coat meeting the requirements of the Standard Specifications to ensure a proper bond between the two layers of pavement. The tack coat must be applied by a tack truck.

The contractor is responsible for cutting all keys to match existing pavement to the SUPERPAVE pavement. All key cuts will be sealed on the same day as the paving is completed. All joint locations and vertical surfaces where proposed pavement meets existing pavement shall be sealed with hot poured joint sealer.

Price for asphalt emulsion tack coat, cutting of keys, and hot poured joint sealer will be included in this Item.

Tack Coat

Material for this work shall conform to the requirements of Subsection 450.43 of the MassDOT Standard Specifications.

Tack coat will be used at the rate of 0.07 GAL/SY on unmilled surfaces or 0.07 to 0.09 GAL/SY on milled surfaces applied by a tack wagon prior to placement of the next pavement course. Tack and sand shall be applied to all joints immediately after paving or as directed by the Engineer. Use of tack or tack and sand shall be considered incidental to the work of these Items.

Hot Poured Rubberized Asphalt

Hot Poured Rubberized Asphalt shall be placed at paving joints, including the centerline, and shall be considered incidental to the work of these Items.

Material for this work shall conform to the requirements of M3.05.0 of the MassDOT Standard Specifications.

All transverse joints and all longitudinal joints of the surface course shall be treated prior to laying the next lane of SUPERPAVE asphalt as follows:

The joint shall be coated with a hot poured joint sealer meeting the requirements of M3.05.0. When using pavers in tandem, the use of the hot poured joint sealer may be omitted at the discretion of the Engineer, if the temperature of the mixture at the longitudinal joint does not fall below 200°F (95°C) prior to the placement of the adjacent mat. No re-heating of the joint shall be permitted.

The hot poured joint sealer shall be applied to the joints from a double-jacketed heating kettle with a positive drive gear pump that is connected to a suitable applicator. The nozzle of the applicator shall be set to deliver sufficient sealant to effectively bond and seal the transverse and longitudinal paving joint between two adjacent lanes of asphalt.

Longitudinal and transverse joints shall be made in a careful manner, well bonded and sealed, and true to line and grade.

Where and as directed, transverse joints for all courses and longitudinal joints for the top course placed under this or previous contracts shall be cut back to expose the full depth of the course, and when the laying of the course is resumed, the exposed edge of the joint shall be treated as above.

In making joints along any adjoining edge such as curb, gutter or an adjoining pavement, and after the mixture is placed by the mechanical spreader, just enough of the hot poured joint sealer material shall be placed by hand method to fill any space left open. These joints shall be properly "set-up" with the back of a rake at the proper height and level to receive the maximum compaction. The work of "setting-up" these joints shall be performed only by competent workmen.

Where and as directed, the first width of any course shall be placed not less than one foot wider than the first width of the top course, and successive widths of top and any other courses shall be placed so that there will be at least one (1) foot overlap between the joints in the top course and the other course.

The rolling of the successive widths of courses shall overlap and shall be performed so as to leave smooth, uniform joints and cross sections.

BASIS OF PAYMENT

Tonnage shall be determined by weight slips submitted to the Engineer. Also, this number will be verified by the inch per square yard method of determining tonnage (inches of approved thickness, multiplied by square yard unit measurement, multiplied by the volume to weight conversion factor of 0.056 tons/inch/square yard).

Work under these items shall be made at the contract unit prices per Ton for Item 450.23 Superpave Surface Course – 12.5 (SSC – 12.5) and Item 450.31 Superpave Intermediate Course – 12.5 (SIC – 12.5). Such payment shall be considered full compensation for labor, tools, equipment, materials, sawcutting, sweeping, tack coat, joint sealant, and any incidentals necessary for the satisfactory completion of the work as specified herein. No additional payment shall be request for tack coat and joint sealant.

This price shall also include all necessary work to prepare the pavement surface, including street sweeping, as well as any requirements as listed in Section 450 of the MassDOT Standard Specifications and contained herein that are not covered under other specified payment items.

Work under this item (including incidentals for Asphalt Emulsion for Tack Coat and/or Joint Sealant) shall conform to the relevant provisions of Section 450 of the MassDOT Standard Specifications and the following:

GENERAL

The work shall include the furnishing and placement of porous pavements along the western and southern sides of the parking lot, as shown on the plan and as directed by the Engineer. The final limit of the porous pavement shall be determined in the field by the City. The thickness of each pavement course shall be as shown on the plans or as directed by the City.

The specification of this porous asphalt pavement is for stormwater management functions, which include water quality treatment, peak flow reduction, storm volume reduction via groundwater recharge, and increased hydrograph time lag. This specification is intended for a cold climate application based upon the field experience at the UNHSC porous asphalt parking lot located in Durham, New Hampshire; however, the specification can be adapted to projects elsewhere provided that selection of materials and system design reflect local conditions, constraints, and objectives.

The work of this Section includes subgrade preparation, installation of the underlying porous media beds, and porous asphalt mix (mix) design, production, and installation. Porous media beds refer to the material layers underlying the porous asphalt pavement. Porous asphalt pavement refers to the compacted mix of modified asphalt, aggregate, and additives.

The porous asphalt pavement specified herein is modified after the National Asphalt Pavement Association (NAPA) specification outlined in Design, Construction, and Maintenance Guide for Porous Asphalt Pavements, Information Series 131 (2003) and Design, Construction, and Maintenance of Open-Graded Friction Courses, Information Series 115 (2002).

Alternative specifications for mix, such as Open Graded Friction Courses (OGFC) from Federal Agencies or state Departments of Transportation (DOT), may be used if approved by the Engineer. The primary requirements for the specifications of the mix are performance grade (PG) asphalt binder, binder content, binder draindown, aggregate gradation, air void content, retained tensile strength (TSR).

SUBMITTALS

- Submit a list of materials proposed for work under this Section, including the name and address of the materials producers and the locations from which the materials are to be obtained.
- Submit certificates, signed by the materials producers and the relevant subcontractors, stating that materials meet or exceed the specified requirements, for review and approval by the Engineer.
- Submit samples of materials for review and approval by the Engineer. For mix materials, samples may be submitted only to the QA inspector with the Engineer's approval.
- Submittal requirements for samples and certificates are summarized in the QC/QA section below.

- Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work in this section.
- Codes and Standards - All materials, methods of construction and workmanship shall conform to applicable requirements of AASHTO ASTM Standards, NHDOT Standard Specifications for Road and Bridge Construction, latest revised (including supplements and updates), or other standards as specified.
- QC/QA requirements for production of mix are discussed in the Materials section, and those for construction of the porous media beds and paving are discussed in the Execution section.
- Table 1 in the Materials section provides further details on the submittal requirements.

QA/QC

Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work in this section.

Codes and Standards - All materials, methods of construction and workmanship shall conform to applicable requirements of AASHTO ASTM Standards, NHDOT Standard Specifications for Road and Bridge Construction, latest revised (including supplements and updates), or other standards as specified.

QC/QA requirements for production of mix are discussed in the Materials section, and for construction of the porous media beds and paving in the Execution section.

Table 1. Submittal requirements.

Material or Pavement Course*	Properties to be reported on Certificate**
choker course, reservoir course	gradation, max. wash loss, min. durability index, max. abrasion loss, air voids (reservoir course)
filter course	gradation, permeability/ sat. hydraulic conductivity
filter blanket	gradation
geotextile filter fabric	manufacturer's certification, AOS/EOS, tensile strength
striping paint	certificate
binder	PGAB certification
coarse aggregate	gradation, wear, fracture faces (fractured and elongated)
fine aggregate	gradation,
silicone	manufacturer's certification
Fibers (optional)	manufacturer's certification
mineral filler (optional)	manufacturer's certification
fatty amines (optional anti-strip)	manufacturer's certification
hydrated lime (optional anti-strip)	manufacturer's certification

* Samples of each material shall be submitted to the Engineer (or QA inspector for mix). These samples must be in sufficient volume to perform the standardized tests for each material.

** At a minimum, more material properties may be required (refer to Materials Section).

MATERIALS

A. Porous Asphalt Mix

1. Mix materials

Mix materials consist of modified performance grade asphalt binder (PGAB), coarse and fine aggregates, and optional additives such as silicone, fibers, mineral fillers, fatty amines, and hydrated lime. Materials shall meet the requirements of the NAPA's Design, Construction, and Maintenance of Open-Graded Friction Courses, Information Series 115 (2002), except where noted otherwise below or approved in writing by the Engineer.

2. Polymer Modified PGAB and Mix Designs.

The asphalt binder shall be a polymer and/or fiber modified Performance Graded asphalt binder (PGAB) used in the production of Superpave Hot Mix Asphalt (HMA) mixtures. Ideally for maximum durability, the PGAB shall be two grades stiffer than that required for dense mix asphalt (DMA) parking lot installations, which is often achieved by adding a polymer and/or fiber. Mix designs will meet or exceed criteria listed in Table 3

The PGAB polymer modifiers are to be either styrene butadiene rubber (SBR) or styrene butadiene styrene (SBS). SBS is typically reserved for large projects as terminal pre-blending is required. SBR is feasible for smaller projects as it can be blended at the plant or terminal blended. The quantity of rubber solids in the SBR shall typically be 1.5-3% by weight of the bitumen content of the mix.

The dosage of fiber additives shall be either 0.3 percent cellulose fibers or 0.4 percent mineral fibers by total mixture mass. Fibers are a simple addition either manually for a batch plant or automated for larger drum plants. The binder shall meet the requirements of AASHTO M320.

The PGAB may be pre-blended or post-blended. The pre-blended binder can be pre-blended at the source or at a terminal. For post-blended addition, the modifier can either be in-line blended or injected into the pugmill at the plant.

The following asphalt mix designs are recommended:

- a. PG 64-28 with 5 pounds of fibers per ton of asphalt mix. This mix is recommended for smaller projects with lower traffic counts or loading potential. This mix is manageable at common batch plants.
- b. Pre-Blended PG 64-28 SBS with 5 pounds of fibers per ton of asphalt mix. This mix is recommended for large projects > 1acre where high durability pavements are needed. The SBS will be supplied by an approved PGAB supplier holding a Quality Control Plan approved by the state DOT. A Bill of Lading (BOL) will be delivered with each transport of PG 64-28 SBS. A copy of the BOL will be furnished to the QA inspector at the Plant.

- c. Post-Blended PG 64-28 SBR with 5 pounds of fibers per ton of asphalt mix. This mix is recommended for projects where high durability pavements are needed. The SBR will be supplied by a HMA plant approved to perform in-line blending or blending by injection into the pugmill. A Post-Blended SBR Binder Quality Control Plan (Table 4) will be submitted to the Engineer for approval at least 10 working days prior to production.
- d. Pre-Blended PG 76-22 modified with SBS and 5 pounds of fibers per ton of asphalt mix. This mix is recommended for large sites anticipating high wheel load (H-20) and traffic counts for maximum durability. The SBS will be supplied by an approved PGAB supplier holding a Quality Control Plan approved by the state DOT. A Bill of Lading (BOL) will be delivered with each transport of PG 76-22 SBS. A copy of the BOL will be furnished to the QA inspector at the Plant.
- e. Post-Blended PG 76-22 modified with SBR and 5 pounds of fibers per ton of asphalt mix. This mix is recommended for large sites anticipating high wheel load (H-20) and traffic counts for maximum durability. The SBR will be supplied by a HMA plant approved to perform in-line blending or blending by injection into the pugmill. A Post-Blended SBR Binder Quality Control Plan (Table 2) will be submitted to the Engineer for approval at least 10 working days prior to production.
- f. Quality control plans may be altered at the discretion of the Engineer and based on feasible testing as suggested by the asphalt producer. Certain QC testing requirements during production may not be feasible for small projects in which limited asphalt is generated. Some testing methods cannot be completed during the time needed during small batch (less than approximately 50 tons of porous asphalt mix) production. The feasibility should be assessed with the Engineer and producer.

Table 2. Post-Blended SBR Binder QC Plan requirements.

<p>The QC Plan will contain:</p> <ol style="list-style-type: none"> 1. Company name and address 2. Plant location and address 3. Type of Facility 4. Contact information for the Quality Control Plan Administrator 5. QC Tests to be performed on each PGAB 6. Name(s) of QC Testing Lab to perform QC and Process Control testing. 7. Actions to be taken for PG Binders and SBR in Non compliance 8. List of mechanical controls (requirements below) 9. List of process controls and documentation (requirements below)
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List of Mechanical Controls

1. Liquid SBR no-flow alert system with an “alert” located in the control room and automatic documentation of a no flow situation on the printout
2. Provide means of calibrating the liquid SBR metering system to a delivery tolerance of 1%.
3. A batching tolerance at the end of each day’s production must be within 0.5% of the amount of SBR solids specified.
4. Mag-flow meter (other metering system may be considered)
5. Method of sampling liquid SBR

List of Process Controls and Documentation

1. Printouts of liquid SBR and PG binder quantities must be synchronized within one minute of each other
2. SBR supplier certification showing the percent of SBR solids in liquid SBR
3. Test results of a lab sample blended with the specified dosage of SBR. At a minimum, provide the name of the PGAB and liquid SBR suppliers, and PGAB information such as grade and lot number, and SBR product name used for the sample.
4. MSDS sheet for liquid SBR
5. Handling, storage, and usage requirements will be followed as required by the liquid SBR manufacturer
6. At a minimum, provide a table showing proposed rate of SBR liquid (L/min.) in relation to HMA production rate (tons per hour, TPH) for the % solids in liquid SBR, quantity of SBR specified for HMA production, and the specific gravity of the SBR.
7. QCT or QC Plan Administrator must be responsible for documenting quantities, ensuring actual use is within tolerance, etc. All printouts, calculations, supplier certifications etc. must be filed and retained as part of the QCTs daily diary/reports.
8. Method and Frequency of testing at the HMA plant, including initial testing and specification testing.

*This Plan shall be submitted to the Engineer 10 days before production.

3. Anti-Stripping Mix Additives.

The mix shall be tested for moisture susceptibility and asphalt stripping from the aggregate by AASHTO T283. If the retained tensile strength (TSR) < 80% upon testing, a heat stable additive shall be furnished to improve the anti-stripping properties of the asphalt binder. Test with one freeze-thaw cycle (rather than five recommended in NAPA IS 115). The amount and type of additive (e.g. fatty amines or hydrated lime) to be used shall be based on the manufacturer’s recommendations, the mix design test results, and shall be approved by the Engineer.

Silicone shall be added to the binder at the rate of 1.5 mL/m³ (1 oz. per 5000 gal).

Fibers may be added per manufacturer and NAPA IS 115 recommendation if the draindown requirement cannot be met (<0.3% via ASTM D6390) provided that the air void content requirement is met (>18%, or >16% as tested with CoreLok device).

Additives should be added per the relevant DOT specification and NAPA IS 115.

4. Coarse Aggregate.

Coarse aggregate shall be that part of the aggregate retained on the No. 8 sieve; it shall consist of clean, tough, durable fragments of crushed stone, or crushed gravel of uniform quality throughout. Coarse aggregate shall be crushed stone or crushed gravel and shall have a percentage of wear as determined by AASHTO T96 of not more than 40 percent. In the mixture, at least 75 percent, by mass (weight), of the material coarser than the 4.75 mm (No. 4) sieve shall have at least two fractured faces, and 90 percent shall have one or more fractured faces (ASTM D5821). Coarse aggregate shall be free from clay balls, organic matter, deleterious substances, and a not more than 8.0% of flat or elongated pieces (>3:1) as specified in ASTM D4791.

5. Fine Aggregate.

The fine aggregate shall be that part of the aggregate mixture passing the No. 8 sieve and shall consist of sand, screenings, or combination thereof with uniform quality throughout. Fine aggregate shall consist of durable particles, free from injurious foreign matter. Screenings shall be of the same or similar materials as specified for coarse aggregate. The plasticity index of that part of the fine aggregate passing the No. 40 sieve shall be not more than 6 when tested in accordance with AASHTO T90. Fine aggregate from the total mixture shall meet plasticity requirements.

6. Porous Asphalt Mix Design Criteria.

The Contractor shall submit a mix design at least 10 working days prior to the beginning of production. The Contractor shall make available samples of coarse aggregate, fine aggregate, mineral filler, fibers and a sample of the PGAB that will be used in the design of the mixture. A certificate of analysis (COA) of the PGAB will be submitted with the mix design. The COA will be certified by a laboratory meeting the requirements of AASHTO R18. The Laboratory will be certified by the state DOT, regional equivalent (e.g. NETTCP), and/or qualified under ASTM D3666. Technicians will be certified by the regional certification agency (e.g.

NETTCP) in the discipline of HMA Plant Technician.

Bulk specific gravity (SG) used in air void content calculations shall not be determined and results will not be accepted using AASHTO T166 (saturated surface dry), since it is not intended for open graded specimens (>10% AV). Bulk SG shall be calculated using AASHTO T275 (paraffin wax) or ASTM D6752 (automatic vacuum sealing, e.g. CoreLok). Air void content shall be calculated from the bulk SG and maximum theoretical SG (AASHTO T209) using ASTM D3203.

The materials shall be combined and graded to meet the composition limits by mass (weight) as shown in Table 3.

Table 3: Porous Asphalt Mix Design Criteria.

Sieve Size (inch/mm)	Percent Passing (%)
0.75/19	100
0.50/12.5	85-100
0.375/9.5	55-75
No.4/4.75	10-25
No.8/2.36	5-10
No.200/0.075 (#200)	2-4
Binder Content (AASHTO T164)	6 - 6.5%
Fiber Content by Total Mixture Mass	1.3% cellulose or 1.4% mineral
Rubber Solids (SBR) Content by Weight of the Bitumen	1.5-3% or TBD
Air Void Content (ASTM D6752/AASHTO T275)	16.0-22.0%
Draindown (ASTM D6390)*	≤ 0.3 %
Retained Tensile Strength (AASHTO 283)**	≥ 80 %
Cantabro abrasion test on unaged samples (ASTM D7064-04)	≤ 20%
Cantabro abrasion test on 7 day aged samples	≤ 30%

*Cellulose or mineral fibers may be used to reduce draindown.

**If the TSR (retained tensile strength) values fall below 80% when tested per NAPA IS 131 (with a single freeze thaw cycle rather than 5), then in Step 4, the contractor shall employ an antistripping additive, such as hydrated lime (ASTM C977) or a fatty amine, to raise the TSR value above 80%.

B. Porous Media Infiltration Beds

Below the porous asphalt itself are located the porous media infiltration beds as shown on the plans, from top to bottom: a 4” thick layer of choker course of crushed stone; an 8” thickness layer of filter course of poorly graded sand (a.k.a. bankrun gravel or modified 304.1); 3” thickness filter blanket that is an intermediate setting bed (pea gravel); and a 18” thick layer of reservoir course of crushed stone. Alternatively, the pea gravel layer could be thickened and used as the reservoir course depending upon subsoil suitability. This alternative simplifies subbase construction. For lower permeability native soils, perforated or slotted drain pipe is located in the stone reservoir course for drainage. This drain pipe can be daylighted to receiving waters or connected into other stormwater management infrastructure (wetland, storm sewer, etc.). The fine gradation of the filter course is for enhanced filtration and delayed infiltration. The high air void content of the uniformly graded crushed stone reservoir course: maximizes storage of infiltrated water thereby allowing more time for water to infiltrate between storms; and creates a capillary barrier that arrests vertical water movement and in doing so prevents winter freeze-thaw and heaving. The filter blanket is placed to prevent downward migration of filter course material into the reservoir course.

1. Choker Course

Material for the choker course and reservoir course shall meet the following:

- Maximum Wash Loss of 0.5%
- Minimum Durability Index of 35
- Maximum Abrasion Loss of 10% for 100 revolutions, and maximum of 50% for 500 revolutions.

Material for the choker course and reservoir course shall have the AASHTO No. 57 and AASHTO No. 3 gradations, respectively, as specified in Table 2. If the AASHTO No. 3 gradation cannot be met, AASHTO No. 5 is acceptable with approval of the Engineer. AASHTO no. 3 is also suitable for the choker course.

2. Filter Course Material

Filter course material shall have a hydraulic conductivity (also referred to as coefficient of permeability) of 10 to 60 ft/day at 95% standard proctor compaction unless otherwise approved by the Engineer. Great care needs to be used to not over compact materials. Over- compaction results with loss of infiltration capacity. The filter course material is commonly referred to as a bankrun gravel (modified NHDOT 304.1). In order to select an appropriate gradation, coefficient of permeability may be estimated through an equation that relates gradation to permeability, such as described in Correlations of Permeability and Grain Size (Shepherd, 1989) or in Section 8.7 Estimation of Saturated Hydraulic Conductivity (Freeze and Cherry, 1979). The hydraulic conductivity should be determined by ASTM D2434 and reported to the Engineer.

3. Filter Blanket Material

Filter blanket material between the filter course and the reservoir course shall be an intermediate size between the finer filter course above, and the coarser reservoir course below, for the purpose of preventing the migration of a fine setting bed into the coarser reservoir material. An acceptable gradation shall be calculated based on selected gradations of the filter course and reservoir course using criteria outlined in the HEC 11 (Brown and Clyde, 1989). A pea-gravel with a median particle diameter of 3/8" (9.5 mm) is commonplace.

4. Reservoir Coarse

Reservoir Coarse thickness is dependent upon the following criteria (that vary from site to site):

- a. 8" thickness if subdrains are installed. Subdrains ensure that the subbase is well drained
- b. Subdrains, if included, are elevated a minimum of 4" (10 cm) from the reservoir course bottom to provide storage and infiltration for the water quality volume. If the system is lined ,
- c. Pavement system and subbase thickness are $> 0.65 * \text{design frost depth for area}$.

Table 4. Gradations and compaction of choker, filter, and reservoir course materials.

US Standard Sieve Size Inches/mm	Percent Passing (%)			
	Choker Course (AASHTO No.)	Filter Course (Modified NHDOT 304.1)	Reservoir Course (AASHTO No. 3)	Reservoir Course Alternative* (AASHTO No. 5)
6/150	-	100	-	
2½/63	-		100	-
2 /50	-		90 – 100	-
1½/37.5	100		35 – 70	100
1/25	95 - 100		0 – 15	90 – 100
¾/19	-		-	20 - 55
½/12.5	25 - 60		0 - 5	0 - 10
3/8/9.5	-		-	0 - 5
#4/4.75	0 - 10	70-100	-	
#8/2.36	0 - 5		-	
#200/0.075		0 – 6**		
% Compaction ASTM D698 / AASHTO T99	95	95	95	95

* Alternate gradations (e.g. AASHTO No. 5) may be accepted upon Engineer’s approval.

** Preferably less than 4% fines

C. Porous Asphalt Mix Production

1. Mixing Plants.

Mixing plants shall meet the requirements of hot mix asphalt plants as specified in the state DOT or regional equivalent unless otherwise approved by the Engineer (e.g. Section 401- Plant Mix Pavements – General for Quality Assurance specifications in the Standard Specifications for Road and Bridge Construction – State of New Hampshire DOT, 2006, or latest revised edition and including supplemental specifications and updates).

2. Preparation of Asphalt Binder.

The asphalt material shall be heated to the temperature specified in the state DOT specification (if using a DOT spec for the mix) in a manner that will avoid local overheating. A continuous supply of asphalt material shall be furnished to the mixer at a uniform temperature.

3. Preparation of Aggregates.

The aggregate for the mixture shall be dried and heated at the mixing plant before being placed in the mixer. Flames used for drying and heating shall be properly adjusted to avoid damaging the aggregate and depositing soot or unburned fuel on the aggregate.

4. Mineral filler

Mineral filler if required to meet the grading requirements, shall be added in a manner approved by the Engineer after the aggregates have passed through the dryer.

5. Mixing.

The above preparation of aggregates does not apply for drum-mix plants. The dried aggregate shall be combined in the mixer in the amount of each fraction of aggregate required to meet the job-mix formula and thoroughly mixed prior to adding the asphalt material.

The dried aggregates shall be combined with the asphalt material in such a manner as to produce a mixture that when discharged from the pugmill is at a target temperature in the range that corresponds to an asphalt binder viscosity of 700 to 900 centistokes and within a tolerance of ± 11 °C (± 20 °F).

The asphalt material shall be measured or gauged and introduced into the mixer in the quantity determined by the Engineer for the particular material being used and at the temperature specified in the relevant specification.

After the required quantity of aggregate and asphalt material has been introduced into the mixer, the materials shall be mixed until a complete and uniform coating of the particles and a thorough distribution of the asphalt material throughout the aggregate is secured. The mixing time will be regulated by the Engineer.

All plants shall have a positive means of eliminating oversized and foreign material from being incorporated into the mixer.

6. QC/QA During Production

The Contractor shall provide at Contractors' expense and the Engineer's approval a third-party QA Inspector to oversee and document mix production. All mix testing results during production should be submitted to the QA Inspector.

The QC plan may be altered at the discretion of the Engineer and based on feasible testing as suggested by the asphalt producer. Certain QC testing requirements during production may not be feasible for small projects in which limited asphalt is generated. Some testing methods cannot be completed during the time needed during small batch production. The feasibility should be assessed with the Engineer and producer.

The mixing plant shall employ a Quality Control Technician (QCT). The QCT will perform QC/QA testing and will be certified in the discipline of HMA Plant Technician by the relevant certifying agency (e.g. NETTCP in New England). The Contractor shall sample, test and evaluate the mix in accordance with the methods and minimum frequencies in Table 6 and the

Post-Blended SBR Binder Quality Control Plan (if applicable).

Table 5. QC/QA testing requirements during production.

Test	Min. Frequency	Test Method
Temperature in Truck at Plant	6 times per day	
Gradation	Greater of either (a) 1 per 500 tons, (b) 2 per day, or (c) 2 per job	AASHTO T30
Binder Content	Greater of either (a) 1 per 500 tons, (b) 2 per day, or (c) 2 per job	AASHTO T164
Air Void Content	Greater of either (a) 1 per 500 tons, (b) 2 per day, or (c) 2 per job	AASHTO D6752
Binder Draindown	Greater of either (a) 1 per 500 tons, (b) 1 per day, or (c) 1 per job	AASHTO D6390

If an analyzed sample is outside the testing tolerances immediate corrective action will be taken. After the corrective action has been taken the resulting mix will be sampled and tested. If the re-sampled mix test values are outside the tolerances the Engineer will be immediately informed. The Engineer may determine that it is in the best interest of project that production is ceased. The Contractor will be responsible for all mix produced for the project.

Testing Tolerances During Production. Testing of the air void content, binder draindown, and TSR shall be within the limits set in Table 5. The paving mixture produced should not vary from the design criteria for aggregate gradation and binder content by more than the tolerances in Table 6.

Table 6. QC/QA testing tolerances during production.

Sieve Size (inch/mm)	Percent Passing
0.75/19	-
0.50/12.5	±6.0
0.375/9.5	±6.0
No.4/4.75	±5.0
No.8/2.36	±4.0
No.200/0.075 (#200)	±2.0
%PGAB	+0.4, -0.2

Should the paving mixture produced vary from the designated grading and asphalt content by more than the above tolerances, the appropriate production modifications are to be made until the porous asphalt mix is within these tolerances.

Samples of the mixture, when tested in accordance with AASHTO T164 and T30, shall not vary from the grading proportions of the aggregate and binder content designated by the

Engineer by more than the respective tolerances specified above and shall be within the limits specified for the design gradation.

7. Plant Shutdown and Rejection of Mix.

Should the porous asphalt mix not meet the tolerances specified in this section upon repeat testing, the Engineer may reject further loads of mix. Mix that is loaded into trucks during the time that the plant is changing operations to comply with a failed test shall not be accepted, and should be recycled at the plant.

8. Striping Paint

Striping paint shall be latex, water-base emulsion, ready-mixed, and complying with pavement marking specifications PS TT-P-1952.

INSTALLATION

A. Porous Media Beds

Protection of native materials from over compaction is important. Proper compaction of select subbase materials is essential. Improper compaction of subbase materials will result in either 1) low pavement durability from insufficient compaction, or 2) poor infiltration due to over-compaction of subbase. Care must be taken to assure proper compaction as detailed below.

1. Grade Control

- a. Establish and maintain required lines and elevations. The Engineer shall be notified for review and approval of final stake lines for the work before construction work is to begin. Finished surfaces shall be true to grade and even, free of roller marks and free of puddle-forming low spots. All areas must drain freely. Excavation elevations should be within +/- 0.1 ft (+/- 3 cm).
- b. If, in the opinion of the Engineer, based upon reports of the testing service and inspection, the quality of the work is below the standards which have been specified, additional work and testing will be required until satisfactory results are obtained.
- c. The Engineer shall be notified at least 24 hours prior to all porous media bed and porous pavement work.

2. Subgrade Preparation

- a. Native subgrade refers to materials beyond the limit of the excavation. The existing native subgrade material under all bed areas shall NOT be compacted or subject to excessive construction equipment traffic prior to geotextile and stone bed placement. Compaction is acceptable if an impermeable liner is used at the base of the porous asphalt system and infiltration is not desired.
- b. Where erosion of the native material subgrade has caused accumulation of fine materials and/or surface ponding, this material shall be removed with light equipment and the underlying soils scarified to a minimum depth of 6 inches with a York rake or equivalent and light tractor.
- c. Bring subgrade to line, grade, and elevations indicated. Fill and lightly regrade any areas damaged by erosion, ponding, or traffic compaction before the placing of the stone subbase.

- d. All bed bottoms are as level as feasible to promote uniform infiltration. For pavements subbases constructed on grade, soil or fabric barriers should be constructed along equal elevation for every 6-12" of grade change to act as internal check dams. This will prevent erosion within the subbase on slope.
3. Porous Media Bed Installation
- a. Subbase refers to materials below pavement surface and above native subgrade. Upon completion of subgrade work, the Engineer shall be notified and shall inspect at his/her discretion before proceeding with the porous media bed installation.
 - b. Sideslope geotextile and porous media bed aggregate shall be placed immediately after approval of subgrade preparation. Any accumulation of debris or sediment which has taken place after approval of subgrade shall be removed prior to installation of geotextile at no extra cost to the Owner.
 - c. Place sideslope geotextile in accordance with manufacturer's standards and recommendations. Adjacent strips of geotextile shall overlap a minimum of sixteen inches (16"). Secure geotextile at least four feet (1.2 m) outside of the bed excavation and take any steps necessary to prevent any runoff or sediment from entering the storage bed.
 - d. Install filter course aggregate in 8-inch maximum lifts to a MAXIMUM of 95% standard proctor compaction (ASTM D698 / AASHTO T99). Install aggregate to grades indicated on the drawings.
 - e. Install choker, gravel, and stone base course aggregate to a MAXIMUM of 95% compaction standard proctor (ASTM D698 / AASHTO T99). Choker should be placed evenly over surface of filter course bed, sufficient to allow placement of pavement, and notify Engineer for approval. Choker base course thickness shall be sufficient to allow for even placement of the porous asphalt but no less than 4-inches (10 cm) in depth.
 - f. The density of subbase courses shall be determined by AASHTO T 191 (Sand-Cone Method), AASHTO T 204 (Drive Cylinder Method), or AASHTO T 238 (Nuclear Methods), or other approved methods at the discretion of the supervising engineer.
 - g. The infiltration rate of the compacted subbase shall be determined by ASTM D3385 or approved alternate at the discretion of the supervising engineer. The infiltration rate shall be no less 5-30 ft/day or 50% of the hydraulic conductivity (D2434) at 95% standard proctor compaction (refer to section 2.1.A.5).
 - h. Compaction of subbase course material shall be done with a method and adequate water to meet the requirements. Rolling and shaping shall continue until the required density is attained. Water shall be uniformly applied over the subbase course materials during compaction in the amount necessary for proper consolidation.
 - i. Rolling and shaping patterns shall begin on the lower side and progress to the higher side of the subbase course while lapping the roller passes parallel to the centerline. Rolling and shaping shall continue until each layer conforms to the required grade and cross-section and the surface is smooth and uniform.

- j. Following placement of subbase aggregate, the sideslope geotextile shall be folded back along all bed edges to protect from sediment washout along bed edges. At least a four-foot edge strip shall be used to protect beds from adjacent bare soil. This edge strip shall remain in place until all bare soils contiguous to beds are stabilized and vegetated. In addition, take any other necessary steps to prevent sediment from washing into beds during site development. When the site is fully stabilized, temporary sediment control devices shall be removed.

4. QC/QA requirements for Porous Media Bed Construction.

QC/QA activities are summarized in **Table 7.**

B. Porous Asphalt Pavement Installation

1. Mixing Plant

The mixing plant, hauling and placing equipment, and construction methods shall be in conformance with NAPA IS 131 and applicable sections of the state DOT’s specification for asphalt mixes. The use of surge bins shall not be permitted.

Table 7. QC/QA requirements for porous media bed construction

Activity	Schedule
Contractor to notify Engineer for approval	24 hours in advance of start of work
Contractor to employ soil inspector acceptable to Engineer	N/A
Contractor to employ staking and layout control inspector acceptable to Engineer	N/A
Contractor to employ site grading inspector acceptable to Engineer	N/A
Contractor to employ pavement work inspector acceptable to Engineer	N/A
Contractor to notify Engineer for approval	after subgrade preparation, before construction of porous media bed
Contractor to notify Engineer for approval	after subgrade preparation, before construction of porous media bed

2. Hauling Equipment.

The open graded mix shall be transported in clean vehicles with tight, smooth dump beds that have been sprayed with a non-petroleum release agent or soap solution to prevent the mixture from adhering to the dump bodies. Mineral filler, fine aggregate, slag dust, etc. shall not be used to dust truck beds. The open graded mix shall be covered during transportation with a suitable material of such size sufficient to protect the mix from the weather and also minimize mix cooling and the prevention of lumps. When necessary, to ensure the delivery of material at the specified temperature, truck bodies shall be insulated, and covers shall be securely fastened. Long hauls, particularly those in excess of 25 miles (40 km), may result in separation of the mix and its rejection.

3. Placing Equipment.

The paver shall be a self-propelled unit with an activated screed or strike-off assembly, capable of being heated if necessary, and capable of spreading and finishing the

mixture without segregation for the widths and thicknesses required. In general, track pavers have proved superior for Porous Asphalt placement. The screed shall be adjustable to provide the desired cross-sectional shape. The finished surface shall be of uniform texture and evenness and shall not show any indication of tearing, shoving, or pulling of the mixture. The machine shall, at all times, be in good mechanical condition and shall be operated by competent personnel.

Pavers shall be equipped with the necessary attachments, designed to operate electronically, for controlling the grade of the finished surface.

The adjustments and attachments of the paver will be checked and approved by the Engineer before placement of asphalt material.

Pavers shall be equipped with a sloped plate to produce a tapered edge at longitudinal joints. The sloped plate shall be attached to the paver screed extension.

The sloped plate shall produce a tapered edge having a face slope of 1:3 (vertical: horizontal). The plate shall be so constructed as to accommodate compacted mat thickness from 35 to 100 mm (1 1/4 to 4 inches). The bottom of the sloped plate shall be mounted 10 to 15 mm (3/8 to 1/2 inch) above the existing pavement. The plate shall be interchangeable on either side of the screed.

Pavers shall also be equipped with a joint heater capable of heating the longitudinal edge of the previously placed mat to a surface temperature of 95 °C (200 °F), or higher if necessary, to achieve bonding of the newly placed mat with the previously placed mat.

This shall be done without undue breaking or fracturing of aggregate at the interface. The surface temperature shall be measured immediately behind the joint heater. The joint heater shall be equipped with automated controls that shut off the burners when the pavement machine stops and reignite them with the forward movement of the paver. The joint heater shall heat the entire area of the previously placed wedge to the required temperature. Heating shall immediately precede placement of the asphalt material.

4. Rollers.

Rollers shall be in good mechanical condition, operated by competent personnel, capable of reversing without backlash, and operated at speeds slow enough to avoid displacement of the asphalt mixture. The mass (weight) of the rollers shall be sufficient to compact the mixture to the required density without crushing of the aggregate. Rollers shall be equipped with tanks and sprinkling bars for wetting the rolls.

Rollers shall be two-axle tandem rollers with a gross mass (weight) of not less than 7 metric tons (8 tons) and not more than 10 metric tons (12 tons) and shall be capable of providing a minimum compactive effort of 44 kN/m (250 pounds per inch) of width of the drive roll. All rolls shall be at least 1 m (42 inches) in diameter.

A rubber tired roller will not be required on the open graded asphalt friction course surface.

5. Conditioning of Existing Surface.

Contact surfaces such as curbing, gutters, and manholes shall be painted with a thin, uniform coat of Type RS-1 emulsified asphalt immediately before the asphalt mixture is placed against them.

6. Temperature Requirements.

The temperature of the asphalt mixture, at the time of discharge from the haul vehicle and at the paver, shall be between 135-163°C (275 to 325°F), within 6 °C (10 °F) of the compaction temperature for the approved mix design.

7. Spreading and Finishing.

The Porous Asphalt shall be placed either in a single application at 4 inches (10 cm) thick or in two lifts. If more than one lift is used, great care must be taken to ensure that the porous asphalt layer join completely. This means: keeping the time between layer placements minimal; keeping the first layer clear from dust and moisture, and minimizing traffic on the first layer.

The Contractor shall protect all exposed surfaces that are not to be treated from damage during all phases of the pavement operation.

The asphalt mixture shall be spread and finished with the specified equipment. The mixture shall be struck off in a uniform layer to the full width required and of such depth that each course, when compacted, has the required thickness and conforms to the grade and elevation specified. Pavers shall be used to distribute the mixture over the entire width or over such partial width as practical. On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the mixture shall be spread and raked by hand tools.

No material shall be produced so late in the day as to prohibit the completion of spreading and compaction of the mixture during daylight hours, unless night paving has been approved for the project.

No traffic will be permitted on material placed until the material has been thoroughly compacted and has been permitted to cool to below 38 °C (100 °F). The use of water to cool the pavement is not permitted. The Engineer reserves the right to require that all work adjacent to the pavement, such as guardrail, cleanup, and turf establishment, is completed prior to placing the wearing course when this work could cause damage to the pavement. On projects where traffic is to be maintained, the Contractor shall schedule daily pavement operations so that at the end of each working day all travel lanes of the roadway on which work is being performed are paved to the same limits. Suitable aprons to transition approaches, where required, shall be placed at side road intersections and driveways as directed by the Engineer.

8. Compaction.

Immediately after the asphalt mixture has been spread, struck off, and surface irregularities adjusted, it shall be thoroughly and uniformly compacted by rolling. The compaction objective is 16% - 19% in place void content (Corelock).

Breakdown rolling shall occur when the mix temperature is between 135-163°C (275 to 325°F).

Intermediate rolling shall occur when the mix temperature is between 93-135°C (200 to 275°F).

Finish rolling shall occur when the mix temperature is between 66-93°C (150 to 200°F).

The cessation temperature occurs at approximately 79°C (175°F), at which point the mix becomes resistant to compaction. If compaction has not been done at temperatures greater than the cessation temperature, the pavement will not achieve adequate durability.

The surface shall be rolled when the mixture is in the proper condition and when the rolling does not cause undue displacement, cracking, or shoving.

Rollers or oscillating vibratory rollers, ranging from 8-12 tons, shall be used for compaction. The number, mass (weight), and type of rollers furnished shall be sufficient to obtain the required compaction while the mixture is in a workable condition. Generally, one breakdown roller will be needed for each paver used in the spreading operation.

To prevent adhesion of the mixture to the rolls, rolls shall be kept moist with water or water mixed with very small quantities of detergent or other approved material. Excess liquid will not be permitted.

Along forms, curbs, headers, walls, and other places not accessible to the rollers, the mixture shall be thoroughly compacted with hot or lightly oiled hand tampers, smoothing irons or with mechanical tampers. On depressed areas, either a trench roller or cleated compression strips may be used under the roller to transmit compression to the depressed area.

Other combinations of rollers and/or methods of compacting may be used if approved in writing by the Engineer, provided the compaction requirements are met.

Unless otherwise specified, the longitudinal joints shall be rolled first. Next, the Contractor shall begin rolling at the low side of the pavement and shall proceed towards the center or high side with lapped rollings parallel to the centerline. The speed of the roller shall be slow and uniform to avoid displacement of the mixture, and the roller should be kept in as continuous operation as practical. Rolling shall continue until all roller marks and ridges have been eliminated.

Rollers will not be stopped or parked on the freshly placed mat.

It shall be the responsibility of the Contractor to conduct whatever process control the Contractor deems necessary. Acceptance testing will be conducted by the Engineer using cores provided by the Contractor.

Any mixture that becomes loose and broken, mixed with dirt, or is in any way defective shall be removed and replaced with fresh hot mixture. The mixture shall be compacted to conform to the surrounding area. Any area showing an excess or deficiency of binder shall be removed and replaced. These replacements shall be at the Contractor's expense.

If the Engineer determines that unsatisfactory compaction or surface distortion is being obtained or damage to highway components and/or adjacent property is occurring using vibratory compaction equipment, the Contractor shall immediately cease using this equipment and proceed with the work in accordance with the fifth paragraph of this subsection.

The Contractor assumes full responsibility for the cost of repairing all damages that may occur to roadway or parking lot components and adjacent property if vibratory compaction equipment is used. After final rolling, no vehicular traffic of any kind shall be permitted on the surface until cooling and hardening has taken place, and in no case within the first 48 hours. For small batch jobs, curing can be considered to have occurred after the surface temperature is less than 100 °F (38 °C). Curing time is preferably one week, or until the entire surface temperature cools below 100 °F (38 °C). Provide barriers as necessary at no extra cost to the Owner to prevent vehicular use; remove at the discretion of the Engineer.

9. Joints.

Joints between old and new pavements or between successive day's work shall be made to ensure a thorough and continuous bond between the old and new mixtures. Whenever the spreading process is interrupted long enough for the mixture to attain its initial stability, the paver shall be removed from the mat and a joint constructed.

Butt joints shall be formed by cutting the pavement in a vertical plane at right angles to the centerline, at locations approved by the Engineer. The Engineer will determine locations by using a straightedge at least 4.9 m (16 feet) long. The butt joint shall be thoroughly coated with Type RS-1 emulsified asphalt just prior to depositing the pavement mixture when pavement resumes.

Tapered joints shall be formed by tapering the last 450 to 600 mm (18 to 24 inches) of the course being laid to match the lower surface. Care shall be taken in raking out and discarding the coarser aggregate at the low end of the taper, and in rolling the taper. The taper area shall be thoroughly coated with Type RS-1 emulsified asphalt just prior to resuming pavement. As the paver places new mixture on the taper area, an evenly graduated deposit of mixture shall complement the previously made taper. Shovels may be used to add additional mixture if necessary. The joint shall be smoothed with a rake, coarse material discarded, and properly rolled.

Longitudinal joints that have become cold shall be coated with Type RS-1 emulsified asphalt before the adjacent mat is placed. If directed by the Engineer, joints shall be cut back to a clean vertical edge prior to applying the emulsion.

10. Surface Tolerances.

The surface will be tested by the Engineer using a straightedge at least 4.9 m (16 feet) in length at selected locations parallel with the centerline. Any variations exceeding 3 mm (1/8 inch) between any two contact points shall be satisfactorily eliminated. A straightedge at least 3 m (10 feet) in length may be used on a vertical curve. The straightedges shall be provided by the Contractor.

Work shall be done expertly throughout, without staining or injury to other work. Transition to adjacent impervious asphalt pavement shall be merged neatly with flush, clean line. Finished pavement shall be even, without pockets, and graded to elevations shown on drawing.

Porous pavement beds shall not be used for equipment or materials storage during construction, and under no circumstances shall vehicles be allowed to deposit soil on paved porous surfaces.

11. Repair of Damaged Pavement.

Any existing pavement on or adjacent to the site that has been damaged as a result of construction work shall be repaired to the satisfaction of the Engineer without additional cost to the Owner.

12. Striping Paint

Vacuum and clean surface to eliminate loose material and dust.

Paint 4 inch wide parking striping and traffic lane striping in accordance with layouts of plan. Apply paint with mechanical equipment to produce uniform straight edges. Apply in two coats at manufacturer's recommended rates. Provide clear, sharp lines using white traffic paint

Color for Handicapped Markings: Blue

C. QC/QA for Paving Operations

1. The full permeability of the pavement surface shall be tested by application of clean water at the rate of at least 5 gpm (23 lpm) over the surface, using a hose or other distribution devise. Water used for the test shall be clean, free of suspended solids and deleterious liquids and will be provided at no extra cost to the Owner. All applied water shall infiltrate directly without large puddle formation or surface runoff, and shall be observed by the Engineer.
2. Testing and Inspection: Employ at Contractor's expense an inspection firm acceptable to the Engineer to perform soil inspection services, staking and layout control, and testing and inspection of site grading and pavement work. Inspection and list of tests shall be reviewed and approved in writing by the Engineer prior to starting construction. All test reports must be signed by a licensed Engineer.
3. Test in-place base and surface course for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable work as directed by the Engineer.
4. Surface Smoothness: Test finished surface for smoothness using a 10 foot straightedge applied parallel with and at right angles to the centerline of the paved area. Surface will not be accepted if gaps or ridges exceed 3/16 of an inch.

Table 8. QC/QA requirements during paving.

Activity	Schedule/Frequency	Tolerance
Inspect truck beds for pooling (draindown)	every truck	N/A
Take surface temp. behind joint heater	each pull	6°C (10°F) of compaction temp
Consult with Engineer to determine locations of butt joints	as needed	N/A
Test surface smoothness & positive drainage with a 10 ft straightedge	After compaction	4.5 mm (3/16")
Consult with Engineer to mark core locations for QA testing	After compaction	N/A
Hose test with at least 5 gpm water	After compaction	Immediate infiltration, no pudding

BASIS OF PAYMENT

Work under this item shall be made at the contract unit price for Item 461. Porous Pavement per Square Foot. Such payment shall be considered full compensation for labor, tools, equipment, materials, porous asphalt, crushed stone, bankrun gravel, pea gravel, filter fabric, sweeping, sawcutting, joint sealant, and any incidentals necessary for the satisfactory completion of the work as specified herein. No additional payment shall be request for joint sealant.

This price shall also include all necessary work to prepare the pavement surface, including street sweeping, as well as any requirements as listed in Section 450 of the MassDOT Standard Specifications and contained herein that are not covered under other specified payment items.

Work under this Item shall conform to the relevant provisions of Subsections 460 and 472 of the Standard Specifications and the following:

GENERAL

This work shall include temporary asphalt patching to provide temporary access and egress to the properties abutting the work area and temporary curb ramps as determined by the Engineer. It shall also be used for temporary restoration of pavement surface after the installation of drainage pipes, conduits, where not included in the payment of other items of this contract and where such areas are specified by the City. It shall also be used to safeguard raised utility structures as approved or directed by the Engineer. It shall also be used for permanent areas where handwork is required, such as areas behind newly installed driveway sections of sidewalk to match into the existing grade. The Contractor is advised that this is material which will be spread primarily by hand.

No additional compensation will be made for sawcutting existing pavement to provide a clean match line. No payment will be made for roadway patching done outside the excavation pay limits as detailed on the plans. The subsequent removal of this material, if directed by the City, shall also be included in this Item.

Temporary Asphalt Patching shall be placed only upon the direction of the City to the thickness directed and compacted to the satisfaction of the City.

BASIS OF PAYMENT

Work under this Item shall be made at the Contract Unit Price for Item 472. Temporary Asphalt Patching per Ton. Such payment shall include all labor, materials, equipment for surface preparation, excavation, sawcutting, placement, hot poured joint sealer along pavement joints, maintenance and removal, and incidental costs necessary to complete the work to the satisfaction of the Engineer. Sawcut for any trenches shall be considered incidental to this item.

Tonnage shall be determined by weight slips submitted to the Engineer. Where weight slips are unavailable, the inch per square yard method shall determine tonnage (inches of approved thickness, multiplied by square yard unit measurement, multiplied by the volume to weight conversion factor of 0.056 tons/inch/square yard). This calculation method shall also be used to confirm tonnage used.

The Contractor shall be required to maintain areas of temporary pavement in reasonable repair, as determined by the City, and not be compensated for additional materials, labor and incidentals required to do so.

No payment will be made for roadway patching done outside the excavation pay limits shown on the plans.

The subsequent removal of this material, if directed by the City, shall also be considered incidental to this Item.

ITEM 504.	GRANITE CURB TYPE VA4 - STRAIGHT	FOOT
ITEM 504.1	GRANITE CURB TYPE VA4 - CURVED	FOOT
ITEM 509.	GRANITE TRANSITION CURB FOR PEDESTRIAN	FOOT
	<u>CURB RAMPS- STRAIGHT</u>	
ITEM 509.1	GRANITE TRANSITION CURB FOR PEDESTRIAN	FOOT
	<u>CURB RAMPS- CURVED</u>	
ITEM 580.	CURB REMOVED AND RESET	FOOT
ITEM 594.	CURB REMOVED AND DISCARDED	FOOT

Work under these Items shall conform to the relevant provisions of Section 500 of the MassDOT Standard Specifications, the City of Newton General Construction Details and as follows:

GENERAL

The work under Items shall include furnishing and installing granite curb, Type VA, including straight or curved sections, transition pieces for curb cuts, the removal and resetting of existing granite curb and corners, the removal and stacking of existing granite curb, and the removal and discarding of existing granite curb. Transition curb shall be measured as part of Item 504. or 504.1. Granite curb corner pieces shall match existing or be approved by the Engineer. The length of transition pieces shall be installed to meet all ADA Standards, slopes, and requirements.

SUBMITTALS

A minimum of thirty (30) days prior to the start of any construction activity, the contractor shall submit shop drawings for the granite curb to the City for review and approval.

CONSTRUCTION METHOD

All new curbing shall be provided with concrete support, in accordance with the details of design as shown on the plans. Concrete support shall be provided on both sides of curbing that does not have a hard surface backing it up. Concrete for curb lock shall not extend further than two (2) inches below finished roadway elevation. Cost of all concrete support shall be included in the price bid for curb.

Where granite curb is used to stabilize areas of cut at the back of a sidewalk or curb cuts, it shall be measured and paid for under Items 504. and 504.1.

Existing curbing to be reused shall be installed in continuous sections and shall not be intermingled with new curbing. Any interim stacking or other extra handling or relocating of the curb shall be considered for the Contractor's convenience and not cause for additional compensation.

Granite curb shall be set in close conformity with the lines, grades, dimensions and design shown on the plans, as described in the Field Engineering section of the General Requirements of these specifications, or as required by the Engineer.

BASIS OF PAYMENT

Work under these Items shall be paid for at the Contractor bid price per Foot. Such payment shall be considered full compensation for furnishing and installing new granite curb of all types, including all labor, materials, equipment, sawcutting, excavation, fine grading and compacting of both subbase and existing subgrade, concrete support, backfill and removing, resetting and discarding of all types of curb, labor, materials and equipment, and all incidentals to complete the work to the satisfaction of the Engineer.

Work under this Item shall conform to the relevant provisions of Subsection 644 of the MassDOT Standard Specifications, the City of Newton General Construction Details and the following:

GENERAL

The Work under this item shall include furnishing, erecting, maintaining, removing, relocating, and resetting of temporary construction fence as shown on the plans or as directed by the City.

SUBMITTALS

The methods of installation(s) and fence detail(s) shall be submitted a minimum of thirty (30) days prior to the start of any construction activity for approval by the City.

MATERIALS

Temporary fence shall be clean and shall be continuous runs of chain link fence at least 6 feet in height, of uniform appearance, and in good condition.

CONSTRUCTION METHOD

The method of installation shall be approved by the City prior to the start of construction operations. Gates with locks for Contractor access may be required for existing vehicle access locations. A set of keys for the locks shall be provided to the Engineer.

Temporary fence shall be reset as often as required by the contractor activities to meet the project schedule and to stage the construction, subject to approval by the Engineer.

The contractor shall inspect the condition of the temporary fence on a daily basis. Temporary construction fence that is damaged shall be promptly replaced.

BASIS OF PAYMENT

Work under this Item shall be paid for at the Contractor bid price for Item 657. Temporary Construction Fence per Foot, which price shall include all labor, materials and equipment to complete the work, including delivery to the site, setup and removal to the satisfaction of the Engineer.

The work under this item shall conform to Section 670 of the Standard Specifications, as directed by the City, and the following:

GENERAL

Contractor shall provide and maintain silt sacks in all existing and proposed catch basins within the project limits and as directed by the City of Newton.

The work under this Item shall consist of the furnishing, installing, maintaining, and removing silt sacks from all catch basins, drop inlets, and gutter inlets within the limit of work, or otherwise required by the Engineer.

SUBMITTALS

A minimum of thirty (30) days prior to the start of any construction activity, the contractor shall submit shop drawings for the silt sack to the City for review and approval.

MATERIALS

Silt sacks shall be made out of woven polypropylene geotextile fabric and sewn by a double needle machine, using a high strength nylon thread. Devices shall be ACF Environmental (800)-448-3636; Reed & Graham, Inc. Geosynthetics (888)-381-0800; The BMP Store (800)-644-9223; or approved equal.

Silt sacks shall be manufactured to fit the opening of the catch basins and all curb openings shall be blocked to prevent stormwater from bypassing the device. Silt sacks shall be manufactured with two dump straps attached at the bottom of the silt sack. Silt sacks shall have a ¼-inch nylon expansion restraint rope with two (2) inch flat washers to keep the sides of the silt sacks away from the catch basin walls. Silt sacks shall be manufactured so that they have a certified average wide width strength per ASTM D-4884 standards of 165.0 lb./in for regular flow.

CONSTRUCTION METHODS

When the expansion restraint rope is covered with sediment, the silt sack shall be emptied, cleaned, and placed back into the catch basin.

All material removed from the silt sacks shall be properly handled and disposed of by the Contractor, and this must be done in accordance with all DEP regulations, policies, and guidance and at no additional cost to the City. The responsibility for the proper handling and disposal of this material shall be solely the Contractor's.

Material removed from silt sacks shall be transported immediately to the place of disposal in machines or trucks that will not spill the material along the roadway. Any material falling on the roadway shall be removed at the Contractor's own expense.

Silt sack cleanings are classified as a solid waste by the Massachusetts Department of Environmental Protection (DEP) and may be disposed of at any landfill that is permitted by DEP to accept solid waste. Materials containing free-flowing liquids are prohibited from being accepted at landfills. The DEP encourages the beneficial reuse of this material whenever possible; however, use not in accordance with DEP determination, or disposal or use as fill in an unapproved location is not acceptable.

It is anticipated that most, if not all, of the material will be landfilled, therefore the Contractor should be aware that many landfills may require testing and analysis of the material prior to accepting it for disposal

at the facility.

The Contractor should be aware that in the event that test results indicate a hazardous waste that cannot be landfilled, the Contractor shall be responsible for all costs associated with adhering to special regulations regarding disposal of hazardous waste. The Contractor should take this into consideration in preparing the bid.

Silt sacks shall remain in place until the placement of the pavement overlay or surface course and the graded areas have become permanently stabilized by vegetative growth. All materials used for the silt sacks will become the property of the Contractor and shall be removed from the site.

The Contractor shall inspect the condition of silt sacks after each rainstorm and during major rain events. Silt sacks shall be cleaned periodically to remove and dispose of accumulated debris as required. Silt sacks, which become damaged during construction operations, shall be repaired or replaced immediately at no additional cost to the City.

When emptying the silt sack, the contractor shall take all due care to prevent sediment from entering the structure. Any silt or other debris found in the drainage system at the end of construction shall be removed at the Contractor's expense. The silt and sediment from the silt sack shall be legally disposed of offsite. Under no condition shall silt and sediment from the insert be deposited on site and used in construction.

When the silt sacks are removed after the work has been completed, the Contractor shall clean and flush all drainage structures as incidental to this item.

BASIS OF PAYMENT

The work under this item shall be paid at the Contractor bid price for Item 697.1 Silt Sack per Each. Such payment shall be considered full compensation for providing and installing, maintaining and removing silt sacks in locations as requested by the City as well as properly disposing of accumulated material. Such payment shall constitute full compensation for installing and maintaining silt sacks for the duration of the project. Any replacement of silt sacks within the duration of the construction shall be considered incidental to this item.

The work under this item shall conform to Section 670 of the Standard Specifications and the following:

GENERAL

The work under this item shall consist of providing, installing, maintaining, and removing sedimentation barriers in the locations noted on plans and as specified herein.

This item consists of installing sedimentation barriers, also referred to as compost filter socks consisting of a 12-inch-diameter filter tube filled with approved compost materials.

MATERIALS

Fabric material for sediment barrier tubes shall be multifilament polypropylene with a mesh opening of 1/8". The fabric shall be manufactured either orange colored or orange striped for visibility. Black fabric shall not be approved.

Fabric material shall have a tensile strength of not less than 202 p.s.i. based on ASTM specification D5035-95 and shall have a ultra-violet exposure resistance of 100% at 1,000 hours based on ASTM specification G155.

Compost material for the sedimentation barrier fill shall be derived from agricultural, food, or industrial residues; bio-solids (treated sewerage sludge); yard clippings; and source-separated or mixed solid waste. The particle size shall be as noted herein. The compost shall emit no objectionable odors and shall be free of man-made foreign matter. The compost shall be certified through the U.S. Composting Council's (USCC) Seal of Testing Assurance (STA) Program

Compost materials for barrier fill shall be consistent with the following:

Parameters	Reported as Unit of Measure	Filter Sock Fill Values
pH	pH units	6.0-8.5
Soluble Salt Concentration	dS/m (mmhos/cm)	Maximum 5
Moisture Content	% wet weight basis	30-60
Organic Matter Content	% dry weight basis	25-65
Particle Size	% passing a selected mesh size, dry weight basis	<ul style="list-style-type: none"> • 3" 100% passing • 1" 90 to 75% passing • 1/4" 40% passing
Stability Carbon Dioxide Evaluation Rate	mgCO ₂ -per g OM per day	< 8
Physical Contaminants	% dry weight basis	< 1

THE CONTRACTOR SHALL NOTE:

All composting materials shall be provided with a Certificate of Compliance from an STA Program Certified Laboratory, verifying that the compost meets the parameters listed herein. The certification shall not be more than 90 days old.

Stakes for installing sedimentation barriers shall be 2x2" square hard wood stakes all wood stakes with sharp edges protruding, as is caused by driving the stakes, shall be trimmed to a blunt end. Steel stakes or plastic stakes may be used provided that the engineer has approved the material. And that protruding end of the stake is blunt or bent over.

CONSTRUCTION METHODS

Sedimentation barriers shall be filled by truck mounted blowers and filled with an adequate volume of material that will provide a firm barrier that slumps not more than 20% of the height measured in place.

Sedimentation barriers shall be installed in the locations noted on the erosion control plans and in locations as directed by the engineer. Sedimentation barriers shall be provided in continuous lengths not to exceed 100 feet. Shorter lengths may be used as needed to finish a line of barrier, but shall not be shorter than 10 feet.

The barrier sections shall be overlapped not less than 2 feet at section ends, with the ends pressed firmly together, and all section ends shall be staked with the fabric ends tied off.

Stakes shall be driven into the existing grade not less than 1 foot. The stakes shall be spaced at 10 feet on center and the Contractor shall provide additional stakes as needed for the ends of each section and for overlapping sections.

The Contractor is responsible for the maintenance of the sedimentation barrier during construction. This shall include the periodic inspection of the barrier lines during construction. The Contractor shall remove accumulated sediment that is higher than $\frac{1}{2}$ the height of the barrier, or before a major storm event as directed by the Engineer.

The Contractor shall remove the sedimentation barrier at the completion of the project. The removal shall include removing all sediment accumulated at the barrier line, all stakes and the barrier and the compost fill. The timing of this removal shall be as directed by the engineer and shall not occur before a major storm event. The final grade below and around the sedimentation barrier shall be finished to the match the existing grade.

BASIS OF PAYMENT

Payment for this item shall be at the contract unit price for Item 697.3 Sedimentation Barrier per linear Foot, which shall be considered full compensation for all materials, tools, labor, and equipment needed to complete the work under this item. All of the costs associated with removing and disposing of the sedimentation barrier, including all stakes, compost fill, and any accumulated sediment shall be included in the contract unit price.

ITEM 701.	CEMENT CONCRETE SIDEWALK	SQUARE YARD
ITEM 701.1	CEMENT CONCRETE SIDEWALK AT DRIVEWAYS	SQUARE YARD
ITEM 701.2	CEMENT CONCRETE PEDESTRIAN CURB RAMP	SQUARE YARD

The work to be done under this item shall conform to the relevant provisions of Subsection 701 of the Standard Specifications, the latest Americans with Disabilities Act (ADA) regulations and Massachusetts Architectural Access Board (AAB) regulations, the MassDOT Construction Standard Details dated October 2017, the City of Newton General Construction Detail dated December 2021, and as directed by the City, with the information contained in Massachusetts Department of Transportation Wheelchair Ramp Standards, and the following:

GENERAL

The AAB/ADA 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.

CONSTRUCTION METHODS

Item 701.1 Cement Concrete Sidewalk at Driveways applies to the cement concrete walkway as specified on the plans. The cement concrete walkway shall be constructed with six (6) inches of cement concrete over eight (8) inches of gravel borrow. All sidewalk, pedestrian curb ramps, and raised concrete islands shall be constructed with four (4) inches of cement concrete over eight (8) inches of gravel borrow.

Sidewalks and driveways shall be constructed in accordance with requirements of the Standard Specifications, including placement of alternating sections, 30 feet in length and provided with expansion joints. Expansion filler shall also be used at pours against buildings, walls or other hard objects.

All pedestrian curb ramp joints and transition sections that define grade changes shall be formed, staked and checked prior to placing cement concrete. All grade changes are to be made at joints. The Contractor is responsible for ensuring that all pedestrian curb ramps are designed to conform to AAB/ADA and are approved by the City. All pedestrian curb ramps shall have detectable warning panels permanently embedded into the concrete at the bottom of the ramp.

All concrete work shall be in accordance with the procedures of NRMCA CIP-14 (Appendix B) regarding strike off and finishing operations and timing. If an evaporation retarder is required due to hot weather conditions, ensure that the evaporation retarder is applied in strict compliance with the manufacturer’s recommendations. An evaporation retarder should not be used as a finishing aid. The Contractor shall cure the surface using a curing membrane meeting the requirements of ASTM C 309/1315 Type 1 Class B (Cureshield EX or equal).

Detectable warning panels shall be installed as shown on the Plans and as detailed in MassDOT Construction Standard Detail E 107.6.5 dated October 2017 and the City of Newton General Construction Detail dated . The tile shall conform to ADA requirements. The color of the detectable warning panels shall be Federal Yellow. The contractor shall provide a sample of the panels to the City for approval prior to ordering.

Contractor is responsible for securing areas with curing concrete, and shall supply barricades or watchmen,

as necessary to prevent defacement of concrete surfaces. The Contractor shall be responsible for maintaining new concrete work and shall insure that no defects, markings, or damage by vandals or animals occurs. It shall be the responsibility of the Contractor to replace any damaged portions of the work at their own expense.

BASIS OF PAYMENT

The work under these items shall be paid for at the Contractor bid prices for Item 701. Cement Concrete Sidewalk, Item 701.1 Cement Concrete Sidewalk at Driveways, and Item 701.2 Cement Concrete Pedestrian Curb Ramp per Square Yard based on the measured quantity actually installed and approved. Such payments shall be considered full compensation for all labor, materials, equipment, and form work needed to form the grade and install the cement concrete walkways and cement concrete pedestrian curb ramps as specified herein. The cost of the detectable warning panel installed in the pedestrian curb ramps shall be included in the square yard cost of the pedestrian curb ramp item. The cost for granite transition curb shall be paid for under their respective items; Item 509. Granite Transition Curb for Pedestrian Curb Ramps – Straight and Item 509.1 Granite Transition Curb for Pedestrian Curb Ramps – Curved. The cost for gravel borrow shall be paid under Item 151. Gravel Borrow.

ITEM 707.8	STEEL BOLLARD	EACH
ITEM 708.	STEE BOLLARD REMOVED AND RESET	EACH

Work to be done under this item shall conform to the Standard Specifications Subsections 710 and 900 and the following:

GENERAL

The work shall include the furnishing and installing concrete-filled steel bollards and concrete-filled steel bollards with sign posts and removing and resetting existing bollards as shown on the plans in conformance with the City of Newton General Construction Details dated December 2021 and as directed by the City.

The work associated with removing and resetting the existing bollards in front of the EV charging stations shall include excavating the existing bollards and concrete foundations, removing the bollards from the concrete foundation, and reinstalling the bollards in a new concrete foundation at the locations to be determined in the field by the City.

A minimum clearance of 4 feet shall be provided between the bollards to be reset in front of the EV charging stations.

The Contractor shall verify the final locations of all steel bollards with the City before installation.

MATERIALS

The steel bollards shall be 4” diameter ductile iron pipe filled with concrete, as shown in the construction details. The top of the bollards shall be round concrete fill.

Three (3) inch wide yellow reflector tape shall be placed 8” below the top of the bollards.

The steel bollard with sign post shall be as shown on the plan and as directed by the City.

Accessible parking space signs shall be paid under Item 832.

The bollards shall be painted powder-coated black and shall conform to the relevant provisions of Subsection 960 of the Standard Specifications and the City of Newton General Construction Details

Cement concrete for bollards and footings shall be 3,000 psi and shall conform to Subsection M4.02.00 of the Standard Specifications.

The Contractor shall submit shop drawings to the City for review and approval prior ordering.

CONSTRUCTION METHOD

The Contractor shall excavate to the proper depth and width to allow the bollards and concrete footing to be installed as shown on the plans. Any unsuitable material found during excavation shall be removed and replaced with gravel and compacted to the satisfaction of the City.

All bollards shall be set vertically plumb and securely anchored in cement concrete footings as called for in the construction details. The Contractor is responsible for securing areas with curing concrete and shall take all precautions to keep the bollards plumb, level, and aligned until the concrete footing has set. The Contractor shall be responsible for maintaining new concrete work and shall ensure that no defects, markings, or damage by vandals or animals occur. It shall be the responsibility of the Contractor to replace any damaged portions of the work at their own expense.

The cut edges of the ductile iron tube shall be beveled and rendered safe prior to placement of the dome-shaped concrete-filled top.

BASIS OF PAYMENT

Payment for these items shall be at the contract unit price for Item 707.8 Steel Bollard and Item 708. Bollard Removed and Reset per Each respectively. Such payment shall be considered full compensation for all materials, tools, labor, excavation, backfill, concrete footing and filling, gravel borrow for replacement of unsuitable materials, paint, and equipment any incidental items needed to complete the work under this item.

DESCRIPTION

Work under this Item shall conform to the relevant provisions of Subsection 748 of the MassDOT Standard Specifications and the following:

METHOD OF COMPLIANCE

This item shall consist of preparatory work and operations, including, but not limited to those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site for the establishment of all contractor's facilities necessary for the work on the project and all other work and operations which must be performed or for costs which must be incurred prior to the beginning work. The unit price bid for Item 748, Mobilization shall not exceed 3% of the contract bid total, exclusive of this item. Failure to observe this requirement may result in rejection of the bid in accordance with subsection 2.04: Preparation of Proposals.

The work under these Items shall conform to the relevant provisions of Sections 751, 765, 767, and 770 of the MassDOT Standard Specifications and the following:

GENERAL

Work includes the placement of approved loam borrow, lime, fertilizer, and hydro seeding to restore all disturbed grassed areas as authorized by the Engineer.

CONSTRUCTION METHODS

Loam Borrow shall meet with Material Specifications M1.07.0. Loam Borrow shall pass a 3/8" screen and laid in a minimum depth of 4" after compacted and shall be free of grass and any other unsuitable materials. The placement of new loam borrow shall be as follows.

In new areas or areas of significant disturbance, loam borrow shall be placed with a minimum depth of four (6) inches after compaction. In existing grass areas to remain, or where there is minimal disturbance to the surface, depressions shall be filled and a top dressing of loam borrow shall be applied to a general depth of one (1) inch after compaction. Prior to the application of the top dressing, the Contractor shall be required to mechanically aerate these areas by a means acceptable to the Engineer.

Loam Borrow shall be used to fill depressions and shape the surface to provide for proper flow of drainage, as well as enhance the general appearance of these grassed areas. Areas adjacent to curbs and other such hard surfaces shall be pre-worked and tapered down one (1) to two (2) inches so as to allow the top dressing to end up flush with the hard surface.

Loam Borrow shall be installed in close conformity with the lines, grades, dimensions and design shown on the plans, as described in the Field Engineering section of the General Requirements of these specifications, or as required by the Engineer.

Lime shall be ground limestone containing not less than 95% calcium and magnesium carbonates. Lime shall be applied at a rate of 75 to 100 lbs. per 1,000 square feet prior to seeding.

Hydro seeding shall conform to the requirements of Section 765.65. The hydro seed mixture shall be applied at a rate sufficient to promote lush rapid growth of grass. Fertilizer shall be a complete commercial fertilizer, 10-20-20 grade. Fertilizer in the hydro-seed mixture shall be applied at the rate of 30 lbs. per 1,000 square feet and seed in the hydro-seed mixture shall be applied at a rate of at least 120 lbs. per acre or three (3) lbs. per 1,000 square feet.

The Contractor shall be responsible for watering the hydroseeded areas daily for a minimum of two (2) weeks or until the grass has become established.

BASIS OF PAYMENT

Payment for these items shall be at the contract unit price for Item 751 per cubic yard, which price shall be full compensation for preparing surfaces, including furnishing, placing, raking, shaping and tamping new loam borrow, and furnishing and applying lime.

Payment under Item 765. shall be at the Contract Unit price bid per square yard, which price shall be full compensation preparing the loam surface, furnishing and applying hydro-seed, inclusive of fertilizer, as well as the maintenance of hydro-seeded areas as noted above.

Payment shall be made as follows: 85 percent of the complete installed quantity will be paid at the time of initial seeding. The remaining 15 percent will be paid when the newly seeded areas have been accepted by the Engineer.

Unless otherwise approved by the Engineer, surfaces disturbed outside the Construction Plans shown for the Contractor's convenience, shall be restored as specified herein, at the Contractor's own expense.

GENERAL

This Item addresses the preparation and implementation of a Storm Water Pollution Prevention Plan required by the National Pollutant Discharge Elimination System (NPDES) and applicable Construction General Permit.

Pursuant to the Federal Clean Water Act, effective March 10, 2003, construction activities which disturb 43,669 square feet 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 1, 2003 (68 FR 39087), EPA published the final NPDES construction general permit for construction activity. On August 4, 2003 (68 FR 45817), EPA reissued the General Permit for the Commonwealth of Massachusetts and included state specific requirements.

The NPDES General Permit 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 and, if required, the SWPPP filing to DEP shall be paid by the Contractor.

The owner, MassDOT, and the operator, the Contractor, must submit separate NOIs. In cases where the municipality or other party has control over the plans and specifications or day-to-day site operations, said party must also submit a NOI. The Contractor is responsible to ensure that all required parties have submitted an NOI and shall provide proof of same to the Engineer.

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.

BASIS OF PAYMENT

Work under this item shall be paid at the Contractor bid price for Item 756 NPDES Stormwater Pollution Prevention Plan per Lump sum. Such payment shall include all work detailed above, including Plan preparation, required revisions, revisions/addenda during construction, monthly reports and filing fees are included in the Lump Sum for this Item. Upon final acceptance of the SWPPP by the Department, 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.

Work to be done under this item shall conform to the Standard Specifications Subsection 771 and the following:

GENERAL

The work shall include the furnishing, planting, and/or transplanting specified trees, shrubs, perennials, grasses, and ground covers to locations as shown on the plans and as listed below and/or as directed by the City.

The Contractor shall verify with the City for the final location of the plants before planting.

The work shall include excavation of pits, clearing of the planning areas, trimming, placing of backfill mixture, mulching, watering, staking or guying, wrapping for transport, adding fertilizing and/or other soil amendments, seeding, weeding, watering, care of the plans and replacement of unsatisfactory plants and materials during the life of the contract.

Plant List

<i>ARONIA ARBUTIFOLIA 'BRILLANTISSIMA'</i>	RED CHOKEBERRY
<i>CORNUS RACEMOSA</i>	GRAY DOGWOOD
<i>CORNUS SERICEA 'ARCTIC FIRE'</i>	RED OSIER DOGWOOD
<i>DIERVILLA 'KODIAK ORANGE'</i>	KODIAK ORANGE DIERVILLA
<i>HAMAMELIS VIRGINIANA</i>	AMERICAN WITCHHAZEL
<i>ILEX GLABRA 'COMPACTA'</i>	COMPACT INKBERRY
<i>MYRICA PENNSYLVANICA</i>	NORTHERN BAYBERRY

<i>AMSONIA TABERNAEMONTANA 'BLUE ICE'</i>	BLUE STAR AMSONIA
<i>ANDROPOGON GERARDII</i>	BIG BLUESTEM
<i>ASCLEPIAS TUBEROSA</i>	BUTTERFLY MILKWEED
<i>ASTER NOVAE-ANGLIAE 'PURPLE DOME'</i>	NEW ENGLAND ASTER
<i>CAREX PENNSYLVANICA</i>	PENNSYLVANIAN SEDGE
<i>COREOPSIS LANCEOLATA 'MOONBEAM'</i>	WHORLED TICKSEED
<i>DESCHAMPSIA FLEXUOSA</i>	WAVY HAIR GRASS
<i>GAULTHERIA PROCUMBENS</i>	WINTERGREEN
<i>IRIS VERSICOLOR</i>	BLUE FLAG IRIS
<i>LIATRIS ASPERA</i>	ROUGH BLAZING STAR
<i>LOBELIA CARDINALIS</i>	CARDINAL FLOWER
<i>MOLINIA CAERULEA</i>	PURPLE MOOR GRASS
<i>MONARDA FISTULOSA</i>	WILD BERGAMOT
<i>OENOTHERA FRUTICOSA</i>	EVENING PRIMROSE
<i>PANICUM VIRGATUM</i>	SWITCH GRASS
<i>RUDBECKIA 'AMERICAN GOLD RUSH'</i>	BLACK-EYED SUSAN
<i>SCHIZACHYRIUM SCOPARIUM</i>	LITTLE BLUESTEM
<i>SOLIDAGO SPECIOSA</i>	SHOWY GOLDENROD
<i>WALDSTEINIA FRAGARIOIDES</i>	BARREN STRAWBERRY

DESCRIPTION

Provide all labor, materials, and equipment necessary to complete the work of this Section and as indicated on the Drawings, but not limited to the following:

- Plant Material furnished and placed
- Pruning New Plants as directed by the Landscape Architect
- Plant Material Guarantee and Acceptance
- Planting Soil furnished and Placed
- Refurbished Soil Furnished and Placed
- Soil Additives Provided as Needed
- Maintenance
- Clean-up

References

AMERICAN STANDARD FOR NURSERY STOCK," latest edition, American Association of Nurserymen (ANSI Z60.1)

ANSI 133.1 Safety Requirements for Pruning, Trimming, Repairing, Maintaining and Removing Trees

National Arborist Association - PRUNING STANDARDS FOR SHADE TREES, latest edition

"STANDARDIZED PLANT NAMES," 1942 Edition, American Joint Committee on Horticultural Nomenclature

Definitions

Balled and Burlapped Stock: Exterior plants dug with firm, natural balls of earth in which they are grown, with ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of tree or shrub required; wrapped, tied, rigidly supported, and drum-laced as recommended by ANSI Z60.1.

Balled and Potted Stock: Exterior plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than diameter and depth recommended by ANSI Z60.1 for type and size of exterior plant required.

Container-Grown Stock: Healthy, vigorous, well-rooted exterior plants grown in a container with well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for kind, type, and size of exterior plant required.

Finish Grade: Elevation of finished surface.

Planting Soil Mix: Native or imported loam, manufactured loam, or surface soil modified to become Loam; mixed with soil amendments as specified herein.

Quality Assurance

Qualification of personnel:

Qualification of Landscape Contractor: The work of this Section shall be performed by a landscape contracting firm which has successfully installed work of a similar quality, schedule requirement, and construction detailing with a minimum of five years of experience. Submit proof that the landscape contracting firm meets this requirement.

Qualification of Foreman or Crew Leader: All work of unloading, stockpiling, storing, transporting on-site, planting, staking and guying, fertilizing, and maintenance of trees, shrubs, vines, groundcover, and perennials shall be supervised by a foreman or crew leader who is a Certified Landscape Professional or a Certified Horticulturist. Submit proof of certification. Foreman and Crew Leader shall remain on the project on a consistent basis from the beginning of planting through provisional acceptance.

Material Sampling and Testing shall be specified, performed and paid for under the work of planting soils.

Provide quality, size, genus, species, and variety of exterior plants indicated, complying with applicable requirements in ANSI Z60.1, "American Standard for Nursery Stock."

Tree and Shrub Measurements: Measure according to ANSI Z60.1 with branches and trunks or canes in their normal position.

Locating Plant Material

Schedule and Season: Location of plant material shall be scheduled to provide optimal conditions for acquiring the healthiest specified plants possible from approved nursery sources. Contractor shall identify proposed planting dates on the Construction Schedule submitted within 10 days of the Owner-Contractor Agreement (as specified in Section, SUBMITTAL REQUIREMENTS) and shall be prepared to discuss the planting schedule with the Owner and the Architect.

Notify Landscape Architect of sources of planting materials within twenty-one (21) days after Notice to Proceed is given. Any request for substitutions in plant species, variety or size shall be made within this 21 day period.

Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

Samples and Submittals

- Submit proof of landscape contractor's experience to the Owner's Representative in accordance with paragraph, QUALITY ASSURANCE, of this Section.
- Identify nursery source and availability of specified plants **within 30 days of the award of contract**. Submit to Owner's Representative for approval before ordering material.
- At least 30 days prior to the first day of the planting season described in this Section, submit to the Owner's Representative proof of certification of Foreman or Crew Leader as Massachusetts Certified Landscape Professional or Massachusetts Certified Horticulturist in accordance with paragraph, QUALITY ASSURANCE, of this Section.

At least 30 days prior to ordering materials, the Contractor shall submit to the Owner's Representative samples, certifications, manufacturer's literature and certified test results for materials as specified below. No materials shall be ordered or delivered until the required submittals have been reviewed and approved by the Owner's Representative. Delivered materials shall closely match the approved samples. Approval

shall not constitute final acceptance. The Owner's Representative reserves the right to reject, on or after delivery, any material which does not meet these Specifications.

- Bark Mulch: Submit supplier's product literature and .5 cubic foot sample
- Seed: Submit a manufacturer's Certificate of Compliance to the Specifications with each shipment of each type of seed. These certificates shall include the guaranteed percentages of purity, weed content and germination of the seed, and also the net weight and date of shipment. No seed shall be sown until the Contractor has submitted the certificates.
- Soil Additives: Submit manufacturer's product data for all soil additives needed to amend specified soil in order to meet the requirements of Specification of planting soils and planting
- Topsoil: For all imported and/or manufactured topsoil (exclusive of non-native, existing topsoil stockpiled on site), the contractor shall provide one (1) cubic foot representative sample from each proposed source for testing and approval as directed by the Landscape Architect. The Contractor shall deliver samples to testing laboratory prior to any loaming and shall have the testing report sent directly to the Landscape Architects, and pay all costs. Mechanical and chemical (PH soluble salts) analysis shall be by public extension service agency or a certified private testing laboratory in accordance with the current standards of the Association of Official Agricultural Chemists and approved by Landscape Architect. Report shall be submitted at least one (1) month before any loaming is to be done. Soil tests shall be for Nitrate Nitrogen, Ammonium Nitrogen, Phosphorus, Potassium, Calcium, Aluminum, Soluble Salts and Lead, and show acidity and USDA classification of the soil. Report shall include recommendations based on the analysis and the proposed planting plan.

Delivery, Storage and Handling

Do not prune shrubs before delivery, except as approved by Landscape Architect. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie shrubs in such a manner as to destroy their natural shape. Provide protective covering of exterior plants during delivery. Do not drop exterior plants during delivery.

Handle planting stock by root ball and not trunk or branches.

Deliver exterior plants after preparations for planting have been completed and install immediately. If planting is delayed more than six hours after delivery, set exterior plants trees in shade, protect from weather and mechanical damage, and keep roots moist.

Set balled stock on ground and cover ball with soil, mulch, sawdust, or other acceptable material. Do not remove container-grown stock from containers before time of planting. Water root systems of exterior plants stored on-site with a fine-mist spray. Water as often as necessary to maintain root systems in a moist condition.

Coordination

Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.

Spring	Deciduous materials	March 21 through June 1
	Evergreen materials	April 15 through June 1
Fall	Deciduous materials	September 1 through December 15
	Evergreen materials	August 15 through November 1

If the construction completion date prohibits in-season planting, the Contractor shall receive approval from the Landscape Architect either to complete work after the project completion date or to prepare for out-of-season planting, including wilt-proofing and extra watering measures. The plant guarantee period shall remain as stated below. No frozen ground planting will be permitted. Only heeled in plants will be permitted during summer planting.

Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

MATERIALS

For all imported and/or manufactured loam (exclusive of non-native, existing loam stockpiled on site), loam shall be a “fine sandy loam” or a “sandy loam” determined by mechanical analysis and based on the USDA classification system. It shall be of uniform composition, without admixture of subsoil. It shall be free of stones greater than one inch, lumps, plants and their roots, debris and other extraneous matter over one inch in diameter or excess of smaller pieces of the same materials as determined by the Landscape Architect. It shall not contain toxic substances harmful to plant growth. It shall be obtained from naturally well drained areas which have never been stripped before and have a history of satisfactory vegetative growth. Loam shall contain not less than 10% organic matter as determined by the loss on ignition of oven-dried samples. Test samples shall be oven-dried to a constant weight at a temperature of 230 F, plus or minus 9.

Loam shall provide a rich, organic layer of planting soil that is also well-drained. Loam shall be a mixture of topsoil, compost and sand.

Loam shall have an acidity range of pH 5.6 to pH 6.5. The amount of either sulfur or limestone required to adjust the planting loam to the proper pH range (above) shall be determined by the Landscape Architect on the basis of soil tests as specified herein.

Soil additives: Commercial fertilizer, humus, or other additives shall be used to counteract soil deficiencies as recommended by the soil analysis and as directed by the Landscape Architect on the basis of soil tests as specified herein. Commercial fertilizer shall be a product complying with the State and United States Fertilizer Laws. Deliver to the site in the original unopened containers which shall bear the manufacturer’s Certificate of Compliance covering analysis which shall be furnished to the Landscape Architect. At least 50% by weight of the Nitrogen content shall be derived from organic materials. Fertilizer shall contain the percentages of weight of ingredients as follows, or as recommended by the soil analysis when that is significantly different:

	Nitrogen	Phosphorus	Potash
For all plants	10%	10%	10%

Ground dolomite limestone shall be an approved agricultural limestone containing not less than 85% of total calcium or magnesium carbonates. Limestone shall be ground to such fineness that 50% will pass through a 100 mesh sieve and 90% will pass through a 20 mesh sieve.

Humus shall be natural humus, reed peat or sedge peat. It shall be free from excessive amounts of zinc, low in wood content, free from hard lumps and in a shredded or granular form. According to the methods of testing of A.O.A.C., latest edition, the acidity range shall be approximately 5.5 pH to 7.6 pH and the organic matter shall be not less than 85% as determined by loss on ignition. The minimum water absorbing ability shall be 200% by weight on an oven-dry basis.

Peat moss shall be composed of the partly decomposed stems and leaves of any or several species of sphagnum moss. It shall be free from wood, decomposed colloidal residue and other foreign matter. It shall have an acidity range of 3.5 pH to 5.5 pH as determined in accordance with the methods of testing of A.O.A.C., latest edition. Its water absorbing ability shall be a minimum of 1,100% by weight on an oven-dry basis.

Superphosphate: Superphosphate shall be composed of finely ground phosphate rock as commonly used for agricultural purposes containing not less than 18% available phosphoric acid.

All loam, whether harvested from on-site, imported or manufactured, shall be amended as follows:

- Mix 1 part “Castine Blend Organic Raised Bed Mix” supplied by Coast of Maine (or approved equal) to 2 parts loam by volume.
- Add 1 cup “Pro-Gro 5-3-4” fertilizer supplied by North Country Organics (or approved equal) per 1 gallon container size for shrubs, grasses and perennials.

Plant Materials

Selection of the Nursery Stock:

At least forty-five (45) days prior to the expected planting date (for spring or fall planting) or at least sixty (60) days prior to the expected planting date (for summer planting), the Contractor shall request, in writing, that the Landscape Architect provide a representative to select and tag stock to be planted under this Section. This request shall be made at least fifteen (15) days prior to the date on which stock selections are to be made. The Letter of Request shall also have attached a Letter of Certification from the supplier attesting to the fact that the stock to be selected from is, in fact, the patented plant required under this Section or a substitution approved by the Landscape Architect. All reasonable effort should be made to ensure plants are from sources with USDA Zone 5 plant hardiness.

The Landscape Architect shall supply the necessary tags or seals which shall be durable and capable of accepting weather-resistant ink or an embossed process. The tags or seals shall be attached directly and securely to each selected plant.

The Contractor shall arrange for and bear the cost of transportation (fuel, car rental, etc.), meals in transit, and overnight accommodations (if necessary) to select and tag the required number of specified stock. The Contractor shall furnish and plant all plants shown on the drawings, as specified, and in quantities as listed on the PLANT LIST except where noted. All plants shall be nursery grown.

Plants shall be in accordance with the USA Standard for Nursery Stock of the American Association of Nurserymen.

All plants shall be typical of their species or variety and shall have a normal habit of growth and be legibly tagged with the proper name.

All plants shall be sound, healthy, and vigorous, well branched and densely foliated when in leaf. They shall be free of disease, insect pests, eggs or larvae.

All annual and perennial plants shall be container grown. Stock shall have been grown in a container long enough for the root system to have developed sufficiently to hold its soil together, firm and whole. No plants shall be loose in the container. Annual and perennial plants must be in a moist, vigorous condition. Thin plants will not be accepted.

The root system for all plants shall have an extensive, symmetrically balanced fibrous root system. In addition, all plants shall meet the following:

All parts of the fibrous root system of all plants shall be moist and fresh with white color when washed of soil. When the plant is removed from the container, the visible root mass shall be healthy with white root tips. The root system of all plants shall be free of disease, insect pests, eggs, or larvae.

Any root ball which shows signs of asymmetry, injury, or damage to the root system shall be rejected. Curling or spiraling of the roots along the walls of rigid containers will not be accepted.

All shrubs shall be healthy and vigorous, as noted by healthy white roots, firm root ball, disease free trunk and leaves. All shrubs that are not planted at once shall be protected from desiccation with mulch completing covering the root ball and watered in well. Contractor shall be responsible for shrubs lost due to improper care and preparation.

The diameter and depth of the balls of earth must encompass the fibrous and root feeding system necessary for the healthy recovery of the plant. Minimum root ball diameters and depths shall be in accordance with ASNS standards.

No plants shall be loose in their containers. Container grown plants which have roots growing out of the container shall be rejected.

The Contractor shall take note that only stock grown specifically for hardiness in the same Hardiness Zones as the project site will be accepted. The Contractor's suppliers must certify in writing that the stock has actually been grown under the same zone or a hardier zone or that the stock was asexually propagated from and grafted onto stock from a strain proven hardy to the project site zone conditions. Trees and plants not so certified will not be accepted.

Seed

- ***Seed mixture shall be fresh, clean, new crop seed. Grass shall be of the previous year's crop and in no case shall the weed seed content exceed 0.25% by weight. The seed shall be furnished and delivered in the proportion specified below in new, clean, sealed and properly labeled containers. All seed shall comply with State and Federal seed laws. Submit manufacturer's Certificates of Compliance. Seed that has become wet, moldy or otherwise damaged shall not be acceptable.***
- ***In addition, Percent Pure Live Seed (PLS) shall be calculated for all seed lots using each seed lot's own unique purity and germination test results. Percent Pure Live Seed is defined by the following formula: Percent (%) Purity x Percent (%) Germination/100 = Percent (%) Pure Live Seed (PLS). The minimum % PLS shall be 75% for each seed lot. A "PLS Pound" is defined as the bulk weight of seed required to equal one pound of 100% pure, germinable seed.***
- ***Seed shall be mixed by an approved method on the site or may be mixed by a dealer. If the seed is mixed on the site, each variety shall be delivered in the original containers that shall bear the dealer's guaranteed analysis. If seed is mixed by a dealer then the Contractor shall furnish the Owner's Representative the dealer's guaranteed statement of the composition of the mixture.***
- ***The following seed mix, conforming in plant species to the seeding rates and percentages specified, shall be used in areas as indicated on the Contract Documents and in accordance with the requirements of this Section.***
 1. **50/50 Turf Seed Mix** shall be a 50/50 blend of Kentucky Bluegrass and Perennial Ryegrass as manufactured by Site One Landscape Supply or approved equal.

Proportion

<u>Common Name</u>	<u>By Weight</u>
Corsair Kentucky Bluegrass	25%
Argyle Kentucky Bluegrass	25%
Buccaneer II Perennial Ryegrass	25%
Provocative II Perennial Ryegrass	25%

- a. Substitutions for bluegrass and ryegrass varieties shall be made only with written approval by the Owner's Representative.
- b. Seeding rate shall be 5 pounds per 1,000 square feet for new seeding and 4 pounds per 1,000 square feet for overseeding.

Mulch

Mulch shall be high quality, double-ground, premium bark mulch of 70 percent hemlock bark with the balance spruce and pine bark. Mulch shall have been aged for a minimum of 6 months and not longer than two years. Bark mulch shall be shredded to a uniform size, black in color; free of dirt, debris and foreign matter; with pieces no thicker than one-quarter inch. Mulch must be free of stringy material or chunks over 3 inches in size and shall not contain, in the judgment of the Architect, an excess of fine particles. Submit sample for the Architect's approval.

Water

The Contractor shall be responsible for furnish his/her own supply of water to the site at no extra cost. All plant materials or beds injured or damaged due to the lack of water, or the use of too much water, shall be the Contractor's responsibility to correct. Water shall be potable.

Contractor shall obtain any necessary permits and written approvals from the client to use a municipal water source to water the plant material.

Provide water schedule upon completion of planting. Notify the Landscape Architect 24 hours before watering plant material if there is any deviation from watering schedule.

CONSTRUCTION METHODS

Fine Grading and Loaming

After existing pavement has been removed, existing vegetation has been either removed and stockpiled for transplant or removed, scarify subgrade, remove compacted areas and then spread loam mix. Re-use of native existing loam is the preferred source for planting soil, topsoil, and loam for new plantings.

After the areas to be loamed have been brought to subgrade, and immediately prior to dumping and spreading the loam, the subgrade shall be loosened by disking or rototilling to a depth of at least three inches (3") to permit bonding of the loam to the subsoil. Remove all stones greater than two inches (2") and all debris or rubbish. Such material shall be removed from the site.

Loam shall be placed and spread over approved areas to a depth sufficiently greater than six inches (6") so that after natural settlement and light rolling, the completed work will conform to the lines, grading and elevations indicated. Supply additional loam, after testing and approval, as may be needed to give the specified depths and finished grades under the contract without additional cost to the Owner.

No subsoil or loam shall be handled in any way if it is in a wet, dry, or frozen condition.

Sufficient grade stakes shall be set for checking the finished grades. Grades shall be established which are accurate to one-tenth (1/10th) of a foot either way. Connect contours and spot elevations with an even slope.

After lime, fertilizer, and humus if required have been spread and incorporated into the bed, it shall be carefully prepared by scarifying or harrowing and hand raking. All large stiff clods, lumps, brush, roots, stumps, litter and other foreign matter, and stones over one inch (1") in diameter shall be removed from the loam. Loam shall also be free of smaller stones in excessive quantities as determined by the Landscape Architect. If lawn is to be hydroseeded, lime and fertilizer may be applied with seed.

The whole surface shall then be rolled with a hand roller weighing not more than 100 lbs. per foot of width. During the rolling, 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 to the required grade.

Soil Additives

Follow all recommendations for soil additives as determined by an approved Soil Testing Laboratory, and all manufacturers' instructions pertaining to additives, in addition to the specific requirements of soil mixes described in this section.

Planting Locations

All plant locations shall be staked out on the ground and the locations must be approved by the Landscape Architect before any excavation is started. If it is necessary to adjust any of the locations because of unforeseen problems, the changes shall be under the direction of the Landscape Architect and there shall be no extra charges for these adjustments.

Plant Arrival

Notify the Architect at least five (5) working days prior to the proposed arrival of plant material on the site. Landscape Architect shall inspect trees in their tree pits prior to loosening of root ball covering and backfilling of pits so that adjustments in orientation and alignment can be made. Contractor shall coordinate with Landscape Architect to arrange a site visit as soon as plants have been placed.

All trees, shrubs and groundcover shall be planted within five days of arrival on the site or will be rejected by the Architect. All plants delivered to the site and not planted within 24 hours of delivery shall have their root balls covered with mulch and shall be watered on a daily basis. Container grown shrubs stored on site shall be shaded from direct sunlight at all times and shall not be stored on paved surfaces.

Planting Shrubs

Place planting soil mix in bottom of previously excavated planting pit in eight inch layers and tamp firmly.

Place shrubs carefully, as shown on the contract drawing details, and position so that the shrub will be at the same soil height as it was previously grown. Remove rope from ball and burlapped shrubs and lay burlap back from ball at least 2/3 down. For container-grown shrubs, cut any circling roots and break up root mass if roots are pot-bound.

The planting trench shall be backfilled with planting soil mix. After backfilling is completed, tamp soil firmly and water thoroughly for 15 minutes.

Planting Perennial Groundcover

Groundcover is to be planted in continuous beds. After clearing and grubbing of planting areas, contractor shall excavate plant beds to a depth of 12" below finish grade and grade smooth. Plant beds shall be backfilled

with 12" of prepared planting mix prior to installation of groundcover. Place planting soil mix in six inch layers and tamp firmly. Water thoroughly. Do not puddle. Allow water to drain through undisturbed.

Place groundcover carefully, as shown on the contract drawing details, and position so that the plant will be at the same soil height as it was previously grown.

Mulch as shown on planting details. Mulch entire length and width of continuous groundcover beds.

Planting Annuals

Contractor shall 'butterfly' the root system for all container grown perennials and annuals immediately prior to planting them. Butterflying shall consist of vertically cutting the containerized root ball with a spade through the bottom half of the root ball followed by gently pulling the root ball open at the cut while placing it into the planting hole. The butterflied root system shall be placed over a small ridge of soil in the planting pit in order to assure as much soil to root ball contact as possible and to keep the halves apart.

Seeding

The season for seeding shall be from March 1 to May 15 and from September 1 to October 31. The actual planting of seed 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.

Prepare the weed-free seedbed with rototillers, disk harrows, or other soil preparation equipment and leave the soil with an irregular open surface. All rocks and other debris larger than 2.0 inches in diameter shall be removed from the soil surface. The soil at the time of seeding shall be firm, and the surface shall be loose and open. Seed only when the bed is in a friable condition, not muddy or hard.

Contractor shall obtain Owner's Representative's written acceptance of bed preparation before doing any seeding.

Prior to the start of work, furnish a certified statement as to the number of pounds of materials to be used per 100 gallons of water. This statement shall also specify the number of square feet of hydroseeding that can be covered with the quantity of solution in the hydroseeder. Hydroseed with wood cellulose fiber mulch at a rate of 46 pounds per 1,000 square feet or 2000 pounds per acre.

For the hydroseeding process, a mobile tank with a capacity of at least 500 gallons shall be filled with water and the mixture noted above in the specified proportions. The resulting slurry shall be thoroughly mixed by means of positive agitation in the tank. Apply the slurry by a centrifugal pump using the hose application techniques from the mobile tank. Only hose application shall be permitted. At no time shall the mobile tank or tank truck be allowed onto the prepared hydroseed beds. The hose shall be equipped with a nozzle of a proper design to ensure even distribution of the hydroseeding slurry over the area to be hydroseeded and shall be operated by a person thoroughly familiar with this type of seeding operation.

Hydroseeding shall consist of spreading 100 percent of the required seed uniformly over the prepared loam bed so that the seed comes into direct contact with the soil. To mark the progress of the hydroseeding operation the Contractor may add 10 percent of the wood cellulose fiber mulch to the slurry.

Excessive hydroseeding of planting areas, walkways and driveways shall not be permitted. Contractor shall remove all hydroseed from non-seeded areas.

Mulch

Material shall be placed over entire saucer areas of individual shrubs and over the area of planting beds between plants, to a depth of 1 inch after settlement, not later than one week after planting. Do not apply mulch prior to the first watering of plant materials. Do not apply mulch prior to placement of surface applied fertilizer and

verification of placement by the Landscape Architect. Foliage for shrubs, perennials, grasses and groundcovers shall not be buried by the mulch layer.

Pruning New Plants

Shall be as directed by Landscape Architect and as recommended by the Arborist. Contractor shall review proposed pruning with Landscape Architect and Arborist prior to execution of work.

Each shrub shall be pruned in accordance with American Nurserymen Association Standards and National Arborist Association to preserve the natural character of the plant. Work shall be performed by a specialist as approved by the Architect/Engineer.

All dead wood or suckers and all broken or badly bruised branches shall be removed. In addition, up to one-third of the wood may be removed by thinning out to balance root loss due to transplanting providing the natural character and form of the tree is preserved. Never cut a leader.

Pruning shall be done with clean, sharp tools.

Maintenance of Plant Material

Maintenance shall begin immediately after each plant is planted. The official maintenance period will commence upon Final Acceptance and shall continue for twelve months following Final Acceptance. Maintenance period may carry over to the following growing season (April 1 through December 1) or be extended into the non-growing season depending on the time of planting and seasonal conditions. Contractor shall submit a maintenance plan to the Architect.

Maintenance shall include watering of planted areas, weeding, mulching, removal of dead material, re-setting plants to proper grades in upright position, edging, repairs of washouts and gullies, repairs to protecting fences and all other necessary works of maintenance.

All plants during the maintenance period shall be watered at least twice each week or as needed. At each watering the soil around each tree or shrub shall be thoroughly saturated. If sufficient moisture is retained in the soil, as determined by the Landscape Architect or Owner's Representative, the required watering may be reduced. Trees will require a minimum of ten (10) gallons of water each; shrubs a minimum of five (5) gallons each.

Planting beds and individual plant pits shall be kept free of weeds. Mulch shall be replaced as required to maintain a three inch (3") layer (2" with settlement). Beds and individual pits shall be neat in appearance and maintained to the lines originally laid out.

Plants that die during the maintenance period shall be replaced as directed by the Landscape Architect.

Spraying for both insect pests and diseases shall be included during the maintenance period as required and as directed by the Landscape Architect.

Plant Material Acceptance

Upon completion of the maintenance period, the Contractor shall request in writing that the Landscape Architect formally inspect the planting work.

If plant material and workmanship are acceptable, written notice will be given by the Landscape Architect or Owner's Representative to the Contractor stating that the work has received Provisional Acceptance, and that the guarantee period has commenced from the date of Provisional Acceptance.

If a number of plants are sickly or dead at the time of inspection, or if in the Landscape Architect's opinion, workmanship is unacceptable, written notice will be given by the Landscape Architect to the Contractor in a form of a punch list, which itemizes necessary planting replacements and/or other deficiencies to be remedied. All dead and unsatisfactory plants shall be removed promptly from the project. Replacements shall conform in all respects to the Specifications for new plants and shall be planted in the same manner and maintained for ninety (90) days minimum from time of planting as described above.

Should the Owner require that the Landscape Architect tag replacement plant materials, the Contractor shall locate replacement stock and arrange for the Landscape Architect to select and tag the required replacement stock.

Acceptance of the planting work shall be established by the Landscape Architect in writing, following the completion of maintenance work requirements as specified herein and following the correction of all punch list deficiencies by the Contractor.

Contractor shall maintain an updated list of all plant materials brought to the site that includes any changes in size, species or variety. A final Plant List shall be submitted to the Landscape Architect in conjunction with Contractor's As-built documents. As-built redlines shall indicate locations of all substitutions on the Planting Plan.

Guarantee

Plants shall be guaranteed for a period of one (1) year after written notification of acceptance and shall be alive in satisfactory growth at the end of the Guarantee Period.

During the Guarantee Period, the Contractor shall replace, at his/her expense, in accordance with the Contract Plans and Specifications, any plants that are dead, or in the opinion of the Landscape Architect or Owner's Representative, in an unhealthy or unsightly condition and/or have lost their natural shape due to dead branches, excessive pruning, or other cause.

At the end of the Guarantee Period, a Final Inspection will be held to determine whether any plant material replacements are required. Each plant shall show at least 75% healthy growth and shall have the natural character of its species as determined by the Landscape Architect. Plants found to be unacceptable shall be removed promptly from the site and replaced during the normal planting season, until the plants live through one year.

A Final Inspection for acceptance will be made after the replacement plantings have lived through one (1) year.

All replacements shall be plants of the same kind and size specified in the PLANT SCHEDULE. Replacement cost shall be borne by the Contractor, except for replacements necessitated by vandalism or neglect on the part of others.

Sequence From Plant Material Location Through Final Acceptance

Contractor notifies Landscape Architect of sources of planting materials and proposed substitutions within twenty-one (21) days of Notice to Proceed.

Contractor requests Landscape Architect to tag located plant materials ahead of specified time for plant installation.

Plant material tagged at Nursery by Landscape Architect

Plant locations staked and flagged by Contractor and inspected by Landscape Architect prior to plant arrival.

Contractor notifies Landscape Architect five (5) days in advance of plant material arrival.

Contractor places all stock in plant pits and coordinates with Landscape Architect to inspect plant conditions and locations prior to backfilling.

Upon completion of all plant installation, Contractor submits written request for inspection of planting by the Landscape Architect. If planting work is acceptable, Landscape Architect issues a Completion of Planting letter. Date of letter marks the beginning of the official Maintenance Period. Contractor submits Maintenance Plan to Landscape Architect.

Upon completion of the Maintenance Period, Contractor submits written request for inspection of planting by Landscape Architect. If planting is acceptable, Landscape Architect issues a Provisional Acceptance letter. Date of letter marks the beginning of the one-year Guarantee Period.

Following the one-year Guarantee Period, Owner's Representative coordinates with Contractor to schedule a Final Inspection.

Contractor provides replacement plant materials as necessary until Final Acceptance of all planting by the Owner.

BASIS OF PAYMENT

Work under this item shall be at the contract unit price for Item 799. Landscaping per Lump Sum which price shall constitute full compensation for providing materials, all various plant types including trees, shrubs, perennials, annuals and ground cover equipment, labor and incidentals required to perform the work of the Item, including but not limited to coordination the work with other relevant items; locating sources of plants; excavation of sand based structural soil or planting soil or horticultural soils which were previously placed under the Contract; furnishing and installing plant materials, tree anchors and tree stakes, and crushed stone; providing potable water; performing initial pruning; providing inspection and maintenance on plant materials and replacing dead plants during guarantee period; resetting plants which have settled during guarantee period.

Item 751. Loam Borrow and Item 767.6 Aged Pine Bark Mulch will be measured by the unit cubic yard for each item.

ITEM 804.15 1 1/2 INCH ELECTRICAL CONDUIT TYPE NM - PLASTIC (UL) FOOT

The work under this item shall conform to the relevant provisions Subsection 801 of the Standard Specifications, and the following:

GENERAL

The work shall include the furnishing and installation of a 1 ½ inch diameter nonmetallic plastic conduit for parking lot lighting in accordance with these specifications as shown on the plans and as directed by the City

MATERIALS

The conduit materials shall be Schedule 40 and 80 polyvinyl chloride (PVC) plastic conduit as shown on the plans. Both Schedule 40 and Schedule 80 PVC conduit shall be paid under this item.

Caution tape shall be standard metal foil marking tape, 3 inch wide tape with CAUTION letters and warning messages noted.

Conduit run under porous pavement from handhole to light pole base shall be Schedule 80 PVC, and other conduit shall be Schedule 40 PVC.

Measurement shall be as specified in Section 801.80 of the Standard Specifications, except as noted below.

Pull wires shall be provided in all conduits for future use and shall be considered incidental to this item.

BASIS OF PAYMENT

Work under this Item shall be at the Contract Unit Prices bid under Item 804.15 1 ½ Inch Electrical Conduit Type NM – Plastic (UL) per linear foot, which prices shall be full compensation for furnishing and installing conduit(s) of the appropriate size and kind, sawcutting, excavation, backfill, compaction, gravel borrow, temporary asphalt patching, sand, pull wires, metal foil marking tape, and other incidentals necessary for the satisfactory completion of this work as specified.

The work under this Item shall conform to the relevant provisions of Subsection 801 of the Standard Specifications, Section 800 of the Standard Specifications and Details, and the following:

GENERAL

The work shall include the furnishing and installation of open-bottom, precast polymer concrete electric handholes for the parking lot lighting system, as shown on the plans and as directed. Handholes shall be provided with minimum nominal dimensions of 12” wide x 18” long x 12” deep arranged for bottom conduit entry. The handhole cover shall be the bolt down type and labeled with notation to read “Street Lighting”. Handholes shall be the heavy duty type and rated for installation adjacent to traffic areas.

All electric handhole boxes for parking lot lighting shall be as indicated in the plan set.

MATERIALS

The quality of all materials, the manufacturing process, and the finished sections shall be subject to inspection and approval by the City. All materials that have been damaged after delivery shall be removed and replaced with new materials.

All materials must be in compliance with the relevant AASHTO and ASTM designations and with the approved manufacturer drawings.

WEATHERPROOFING

Apply two coats of bituminous waterproofing material to the exterior handhole surfaces. Apply a brush or spray in accordance with the manufacturer’s instructions accompanying the product. Allow time between coats to permit sufficient drying.

CONSTRUCTION

Precast structures shall have four 3/4-inch galvanized steel suspension bolts or threaded rods that are threaded into the precast structure. The bolts must be placed to allow for proper and sufficient adjustment of the frame and cover as necessary to make the frame and cover flush with the finished grade. The handholes shall be truck rated.

Furnish and install a 5/8” x 10’-long copper clad ground rod, a grounding clamp, and 3 feet of bare #4 AWG with each electric handhole. The frame and cover of each handhole must be grounded in accordance with national and local electric codes.

BASIS OF PAYMENT

Work under this item shall be at the Contract Unit Price bid under Item 811.27 Electrical Handhole – (Municipal Standard) per Each, which price shall include furnishing and installing the handhole complete with frame and cover, excavation, backfill, labor, materials, equipment, and all incidental costs required for the satisfactory completion of this work as specified.

The work under this item shall conform to the relevant provisions of Subsections 801, 813 and 820 of the Standard Specifications and the following:

GENERAL

The work shall include the furnishing and installation of concrete light standard foundation for the street lighting system as shown on the plans, in accordance with the light pole manufacturer, and as directed by the City.

Refer to the plans for the details of the light standard foundation dimensions and installation grade requirements.

SUBMITTALS

Submittals for light standard foundations shall be made in a timely fashion, including all manufactures data sheets, and shop drawings, as applicable, and specified herein.

MATERIALS

All light standard foundations shall be constructed per Section 801.62 of the Standard specifications, except deviations may be required based on field conditions. All deviations must be approved by the engineer prior to making any changes.

Light standard foundations should be placed per the plans and positioned using an approved grade. Precast concrete foundations shall include epoxy coated reinforcing, as shown on the plans, and per the manufacturer's Structural Engineer's recommendations. Confirm exact light fixture pole base anchor bolt requirements for size, length, projection, bolt circle diameter and pattern with the pole manufacturer prior to furnish and installation and install accordingly. Anchor bolts shall be hot dipped galvanized and j-hook style. Minimum foundation diameter and depth shall be as indicated on the plans. Furnish and install galvanized rigid metal conduit in foundation and coupling and plastic type NM conduit stub out over to adjacent handhole, as shown on the plans.

BASIS OF PAYMENT

Work under this item shall be at the Contract Unit Price bid under Item 812.09 Light Standard Foundation Precast per Each, which price shall be full compensation for all labor, equipment, materials, galvanized anchor bolts, galvanized nuts and washers, rigid metal conduit, plastic Type NM conduit, elbows, sweeps, compaction and leveling, excavation (except rock), backfilling and all incidental costs required for the satisfactory completion of this work as specified.

The work under these items shall be in accordance with the relevant provisions of Subsection 813 of the Standard Specifications and the following:

GENERAL

The Contractor shall be required to furnish and install all materials, equipment, and labor necessary to completely wire and operate the street lighting system. All materials and wiring procedures shall conform to the specifications contained herein and to the requirements and standard practices of the Section 800 and the following:

All wire and connectors shall conform to the standards of the National Electrical Manufacturers Association or the Underwriters' Laboratories, Inc., whichever is applicable. All materials and workmanship shall conform to the requirements of the National Electrical Code, Standards of the American Society for Testing and Materials, and any local ordinances that may apply.

Wherever any reference is made to the standards mentioned above, the reference should be construed to mean the standard that is in effect on the day the Notice to Proceed to the Contractor for the work is dated.

Wire sizes shall be based on American Wire Gage (AWG), as applied to copper conductors.

SUBMITTALS

Submittals for wire and splice materials shall be made in a timely fashion including all manufactures data sheets, and shop drawings, as applicable, and specified herein.

MATERIALS

The conductor shall be composed of soft drawn 7-strand copper of the gauge shown on the drawings. The insulation shall be installed as a single jacket of cross-linked polyethylene of Underwriter's Laboratories Type USE-2 or RHH-2-RHW-2 rated at 90 degrees C continuous in wet and dry locations, 600 volt as per the National Electrical Code.

#4 AWG ground conductor shall be bare copper as specified in the standard specifications.

Wire and cable furnished and used shall be new and shall have the size, grade of insulation, voltage and manufacturer's name permanently marked on the outer covering at regular intervals.

Wire and cable shall be delivered to the site in complete coils or reels with identifying size, type SS-111 and insulation tags. Wire and cable shall be protected from weather and damage during storage and handling.

SPLICING MATERIALS AND METHODS

Splicing shall be in accordance with the contract drawings and the standard specifications. All splices shall be suitable for wet locations, including splices in pole bases and load centers. Use of wire nuts is prohibited. Connections in the pole top shall be with insulated pressure connectors.

CONSTRUCTION

No wire shall be drawn in to any conduit until all work that may cause damage to the wire is complete.

All wire shall be continuous from light pole to light pole without running splices in conduits or handholes. Splices are prohibited in handholes except ground conductor.

All wire terminals, taps and splices shall be made secure with connectors, splicing materials and methods as hereinafter specified.

All incoming wires and outgoing wires in highway lighting load centers, handholes and poles shall be banded as indicated on the contract drawings.

GROUNDING

Coatings and rust on conduits and grounding rods shall be removed at the location where the ground fittings are to be installed.

The bare copper conductor shall be connected to the continuous insulated bonding lead, which shall be identified with green plastic marking tape as noted in the specifications. Bonding leads for lighting fixtures on poles shall be an insulated #10 AWG, marked green, which shall be extended to the nearest handhole and interconnected to the bare copper ground wire in the handhole of gauge shown on the contract drawings and the pig tail conductor shall be connected to the ground rod. The ground wire shall also connect to the ground lug on the handhole frame and be bonded to the handhole cover.

A conductor with the same insulation of the power leads shall be installed in all conduits as a continuous bond wire. All bonding leads from fixtures, pole, control boxes, fittings and ground rods shall be connected to the continuous insulated bonding lead which shall be identified with green plastic marking tape as noted in the specifications.

All grounding shall conform to the applicable provisions of the National Electrical Code.
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FIELD TESTS

Upon the completion of each wiring system, and before any connection is made to operating equipment, the Contractor shall perform, in the presence of the Engineer, the following tests of each circuit to determine whether the installations are in acceptable working order.

- a. Tests for continuity
- b. Tests for ground
- c. Tests for insulation resistance (Megger Test) from circuit wires to ground, and between circuit wires.

Tests for ground shall be performed in accordance with the relevant provisions of Section 813 of the Standard Specifications. The entire electrical wiring system shall be tested for continuity, grounds, resistance to ground, insulation, shorts and opens. This shall be done by means of a megohm meter test.

After installation of the wiring system is complete with the required splices, the lamp ballast primary shall be disconnected and each circuit shall be tested with a 1000 volt megger. Tests on each circuit shall be between each conductor. When the measured value is less than 200 megohms between two conductors, the Contractor shall locate the point or points at fault, make proper corrections, and then demonstrate by further test the elimination of such faults.

These tests shall be performed in the presence of the Engineer.

The test results shall be submitted to the Engineer for review and approval. If any results are questionable or inconsistent, the Contractor shall repeat the tests and make any necessary corrections at the request of the Engineer. No wiring system will be accepted until these are satisfactorily performed and approved.

The Contractor shall furnish the Engineer with a report of the megohm-meter readings for a permanent project record.

All tests and any necessary repairs or replacements that are indicated by the Engineer to produce a fault-free system will be performed at the Contractor's expense.

WARRANTIES

The Contractor shall provide a performance warranty for six months on the entire work performed under this contract including the performance of all equipment and components of the roadway lighting system specified. The performance warranty responsibility of the contractor shall commence after official acceptance by the Engineer.

NOTE: The Contractor shall be completely responsible for all maintenance, repairs and replacement of damaged equipment during the functional test and throughout the performance warranty period.

If within 48 hours after notification by the Engineer of a malfunction, and the Contractor fails to make such repairs as necessary, the Engineer will undertake repairs of which all costs are to be SS-113 borne by the Contractor. The cost of any maintenance necessary, except electrical energy, shall be at the Contractor's expense and will be considered as included in the price paid for the Contract item involved and no additional compensation will be allowed therefor.

METHOD OF MEASUREMENT

The work of this section shall be measured by the linear foot along the center line of the conduit in which the conductor is placed. No allowance will be made for the necessary lengths of slacked cable laid around the sides of manholes, handholes, junction boxes, pull boxes, or extending from foundations for making splices, taps in cable, and connecting the internal components of control cabinets. No allowance will be made for cable in controllers, light poles or other items other than conduit.

BASIS OF PAYMENT

Work under these items shall be at the Contract Unit Prices bid under Item 813.3 and Item 813.521 per Foot respectively, which payment shall include full compensation for furnishing, installing and connecting the street lighting cables, the grounding of the system, testing the lighting circuit wiring, grounding wire testing, and for furnishing any equipment and/or materials required and all incidental costs required for the satisfactory completion of this work as specified.

The cost of any maintenance necessary to include testing, replacement of lamps, luminaires, wiring splices, grounding, and all appurtenances, except electrical energy, shall be considered incidental to these items.

The work under this Item shall be in accordance with the relevant provisions of Subsection 813 of the Standard Specifications and the following:

GENERAL

The work shall include the furnishing and installation of ground rod as shown on the plans and as directed by the City.

Measurement and payment under these Items shall be in accordance with the relevant provisions of Section 813 of the Standard Specifications and the following:

BASIS OF PAYMENT

Work under this Item shall be at the Contract Unit Price bid under Item 813.72 per Each 10-foot long unit, complete in place, operational, tested, and accepted by the Engineer, which price shall include full compensation all labor, equipment, materials for ground rod, ground wire, connections to ground rod, exothermic welds, connections to conduit, connections to handhole frame and cover, connections to electric service equipment, and all equipment, tools, labor, and all incidental costs required for the satisfactory completion of this work as specified.

ITEM 823.01	PARKING LOT LIGHT POLE AND LUMINAIRE (SINGLE)	EACH
ITEM 823.02	PARKING LOT LIGHT POLE AND LUMINAIRE (DOUBLE)	EACH
ITEM 823.03	SIDEWALK LIGHT POLE AND LUMINAIRE	EACH

The work under these items shall conform to the applicable requirements of Specifications Subsection 820.of the Standard Specifications and the following:

DESCRIPTION

The Lighting Assemblies shall be as generally described on the Drawings and as detailed in these Special Provisions. This work shall be done in accordance with the Standard Specifications and these Special Provisions, and as detailed on the Drawings. The contractor shall furnish all supervision, materials, equipment, accessories, handling, shipping and delivery to provide the specified Lighting Assemblies as detailed herein, complete with all appurtenances. All transportation, handling, shipping costs, manufacturer's storage and other necessary costs shall be included.

This work shall include providing all labor, equipment, and materials to install the Lighting Assemblies, complete with lamp, wiring, fuses and fuse holders internal to the pole handhole, with ground rod installed, grounding connections and all other items necessary to provide a complete and operational system. This work shall be done in accordance with the Standard Specifications and these Special Provisions, and as detailed on the Drawings.

LIGHTING ASSEMBLIES SHALL BE AS FOLLOWS:

Lighting assembly shall be as indicated on the drawings.

SUBMITTALS

Submit detailed shop drawing submittals with all aspects and dimensions, as well as equipment and material specifications of the proposed pole, luminaire and appurtenances clearly detailed to both Engineer and the City of Newton. Submittals shall be approved by the City prior to ordering materials. Shop drawing submittal shall include point-by-point photometric calculations. Calculations shall be in maintained fc. Include light loss factors in report. Point-by-point calculations shall utilize an IES standard grid. To facilitate these calculations the manufacturer may contact the engineer to receive an Auto Cad .dwg file of the project area and pole layout.

Wiring

All wiring internal to the pole to be completed by the contractor.

Luminaires shall be supplied from the factory with a quick-disconnect connector at the luminaire and at the receptacle.

Poles

Poles shall be delivered to the job site with a factory applied shipping wrap of cardboard or other material to fully protect against scratches and coating stain. Poles shall be blocked and bundled in groups of multiple poles, or use other equivalent means to prevent shifting and damage during transport.

Luminaire

Luminaire shall be manufactured by GE Evolve EALS Series and as detailed below or an approved equal.

Housing: Aluminum die cast enclosure. Integral heat sink for maximum heat transfer.

Lens: Impact-resistant tempered glass.

Paint: Corrosion resistant polyester powder paint, minimum 2.0 mil thickness w/black finish.

Voltage: 277V

Operating Temp: -40°C to 40°C

Vibration: 3G per ANSI C136.31-2010

LM-79: Testing in accordance with IESNA Standards

A1 Luminaire Cat No. EALS03_F3AW730_D1_BLCK W/ ELS-EAL-DBL

A2 Luminaire Cat No. EALS03_C3AW730_D1_BLCK

A3 Luminaire Cat No. EALS03_D5SM730_D1_BLCK

B Luminaire Cat No EALS03_D5SM730_D1_BLCK

Lumen, wattage and distribution shall be as indicated on the drawings.

Anchor Bolts

The pole manufacturer shall provide an anchor bolt template for installation and shall provide one set of 3/4-inch hot-dipped fully galvanized steel anchor bolts in a configuration that exceeds the maximum wind rating of the pole. Bolt circle shall be within the +/-12".

Fasteners

All fasteners shall be stainless steel. All exposed fasteners below 10 feet above grade shall have vandal-resistant heads. Provide standard vandal-resistant fasteners in the "pinned Allen-socket" style requiring a specialized Allen wrench to install and remove. The Allen wrench contains a hole in the end to allow engagement with the vandal-resistant fasteners. All references to vandal resistant or tamper-resistant shall imply this standard vandal resistant fastener.

Acceptable Equipment

Bidders wanting to submit alternative lighting assembly equipment shall submit complete specifications and references for the proposed alternative product a minimum of 10 days prior to the bid submission deadline. The City shall evaluate the proposed alternative product and inform the bidder if the proposed alternative is acceptable to the City. Bids will only be accepted for Lighting Assemblies that have been found to be acceptable by the City prior to submission of the bid packages.

Lamp

Furnish and install in the correct orientation according to manufacturer's specifications a LED lamp in each luminaire.

Ground rod conductor connections

Ground rod connections shall be thermalweld type (Cadweld) or shall be made with a UL listed hydraulically applied (12 ton minimum) compression connector. (Burndy hydraulic compression tool and UL listed for grounding ground rod tap connector or equivalent.) Follow manufacturer's written instructions for installing ground rod connections. Do not exceed the rated wire bundle capacities of the type of ground rod connection used.

Wiring

Exterior and underground wiring in poles, conduit and grounding conductors: 98% conductivity copper 600 volt insulation, XHHW, THHN/THWN, or THWN-2. Streetlight pole internal wiring: 98% conductivity copper 600 volt insulation, MTW, XHHW, THWN-2 or THHN/THWN.

Color code

All conductors shall have color-coded insulation to designate ground, neutral conductor and phases. Colored tape alone is not acceptable. Phases shall be black and red, receptacle branch circuit shall be black, neutral shall be white and ground shall be green.

Wire markers

Shall be plastic cable wrap type with marking tag for permanent tagging. Plastic tag shall have controller and circuit number written on it with permanent ink marking pen per tag manufacturer's directions. Panduit PLF1MA-C Marker Tie, or equivalent.

Splices and Junctions:

1. All splices and junctions shall be made waterproof by a UL approved method. Conductor splice shall be made by UL listed compression type butt splice kit. Waterproofing method shall be by heat shrink, by sealant in waterproof splice cap, or by sealant in cold shrink.
2. #10 AWG or Smaller, above grade: UL listed compression type connectors.
3. #8 AWG or Larger, above grade: UL listed mechanical compression connector.
4. Splices and junctions shall not be buried or installed in conduit.
5. Splices in junction boxes shall be UL listed hydraulic compression (12 tons minimum) type butt or two-wire stub splice with UL listed heat shrink waterproof splice cover.
6. End caps shall be used to seal and insulate the ends of 1/C wires. End caps shall be waterproof of thermally stabilized, modified polyolefin heat shrink material with mastic sealant inside UL listed 600 Volt, 90 degrees C.
7. Wet location splices and junctions shall be accomplished with UL listed heat shrink 600 Volt, 90 degrees C, waterproof splice kits. Raychem Series MCK, Type V or L or equivalent.

EXECUTION

Install poles plumb and true on the foundation and in strict accordance with the manufacturer's instructions. If, needed, use stainless steel flat washers or stainless steel horseshoe shims to plumb the poles. Do not seal under the pole base (to allow for drainage). Tolerance in plumb: $Y < i$ inch in 8 feet.

Factory applied shipping wrap of cardboard or other material shall remain in place throughout handling and installation to protect pole finish, (to be removed only after final pole installation).

Pole grips, truck arms, jaws, trailers and any other surfaces that contact poles prior to or during installation shall be fully and thickly padded to prevent scratching poles. Before final acceptance of the Project, provide repair or touch-up on poles that have been damaged during construction, using a method approved by the manufacturer.

Each streetlight pole shall be provided with its own separate ground rod adjacent to its foundation and bonded to the pole's grounding lug as shown on the Drawings.

Install luminaires with the correct optical system orientation, socket position and inclination angle to meet the specified photometric requirements. Align luminaires vertical and perpendicular (or tangent) to the centerline of the street, install new lamps, and clean luminaire components of all construction dirt and dust and fingerprints prior to final completion.

Handle lighting fixtures carefully to prevent breakage, denting or scoring of fixtures' finishes. Do not install damaged lighting fixtures. Replace with undamaged units and return damaged units to equipment manufacturer. Install luminaire, fusing and wiring complete. Install a wattage identification sticker inside the pole handhole. No other identifying numbers except the manufacturer's nameplate shall be installed on the poles or arms or luminaries.

Splices and junctions shall be made only in pole handholes and underground handhole junction boxes. Perform no more splices than needed. Do not splice or junction any wires that continue through a pole or junction box, in other words, those conductors without a termination to the adjacent pole. Use Junction box as a pulling point only. Cable pulled through poles or junction boxes shall be marked per the following paragraph and shall have sufficient loop to extend 18" beyond handhole or junction box lid for future maintenance but shall not be spliced. All splices in junction boxes shall be made waterproof by a UL listed heat shrink splice cover. All splices and junctions shall be considered incidental to the pay item.

Install a tie wrap type permanent wire marker on each and every pair of conductors passing through every junction box or pole handhole (bundle circuit pairs together). Mark controller number, circuit letter and pole number on each tie wrap and designate home runs as encountered. Install markers in each pole handhole.

BASIS OF PAYMENT

Work under these items shall be at the Contract Unit Prices bid under Item 823.01, Item 823.02, and 823.03 per Each respectively, which payment shall include installed, wired and lamped in place, which price shall include all materials, parking lot light and sidewalk poles, luminaires, labor, and equipment for a complete and accepted installation.

The work under this item shall be done in conformance with Subsection 820 and the following:

GENERAL

The work shall include the furnishing and installation of photo electric control as shown on the plans and as directed by the City.

Photo Electric Control shall be as indicated on the drawings.

BASIS OF PAYMENT

Work under this item shall be at the Contract Unit Prices bid under Item 823.51 Photo Electric Control per Each, which price shall include all labor, material, equipment and all incidental costs required for the satisfactory completion of this work as specified.

The work under this item shall be done in conformance with Subsection 820 and the following:

GENERAL

The work shall include the furnishing and installation of Multiple Control Contactor as shown on the plans and as directed by the City.

Multiple Control Contactor shall be as indicated on the drawings

BASIS OF PAYMENT

Work under this item shall be at the Contract Unit Prices bid under Item 823.52 Multiple Control Contactor per Each, which price shall include all labor, material, equipment and all incidental costs required for the satisfactory completion of this work as specified.

The work under this item shall be done in conformance with Subsection 820 and the following:

GENERAL

The work shall include the furnishing and installation of Time Clock as shown on the plans and as directed by the City.

Time Clock shall be as indicated on the drawings.

BASIS OF PAYMENT

Work under this item shall be at the Contract Unit Prices bid under Item 823.53 Time Clock per Each, which price shall include all labor, material, equipment and all incidental costs required for the satisfactory completion of this work as specified.

GENERAL

The work under this item shall be done in conformance with Subsection 820 and the following:

Contractor shall remove the existing parking lot light post and luminaire and associated pole base and wire after the new parking lot lights have been installed and working properly and as directed by the City. The Contractor shall notify the City in advance and approved by the City prior to remove the parking lot lighting.

Luminaries designated by the City to be removed and discarded shall become the property of the Contractor and shall be legally disposed of off-site.

METHOD OF MEASUREMENT

Item 823.71 Street Lighting Post and Luminaire Removed and discarded will be measured for payment per Each.

BASIS OF PAYMENT

Work under this item shall be at the Contract Unit Prices bid under Item 823.71 Street Lighting Post and Luminaire Removed and Discarded will be paid at the Contract unit price bid per Each, which price shall include all labor, material, equipment, removing the light poles, foundations, and luminaires, legally disposed off-site, backfill, and all incidental costs required for the satisfactory completion of this work as specified.

The work to be done under this item shall conform to the relevant provisions of Subsection 840 of the Standard Specifications and the following:

GENERAL

The work shall include the furnishing and installation of sign supports for new signs and existing signs to be removed and reset as shown on the plans and as directed by the City.

MATERIAL

Sign support shall be 1.75 inch by 1.75 inch square steel and painted black, as indicated in the City of Newton General Construction Details.

BASIS OF PAYMENT

Work under this item shall be at the Contract Unit Price bid for Item 847.1 Sign Sup (N/Guide)+Rte Mkr W/1 Brkway Post Assembly - Steel per Each, which price shall include furnishing and installing the sign post assembly, sawcutting, excavation, gravel backfill, concrete bases, steel reinforcement, anchor bolts, all labor, material, equipment, and all incidental costs required for the satisfactory completion of this work as specified.

Work under this item shall conform to the applicable requirements of Subsection 850 of the MassDOT Standard Specifications, The Manual on Uniform Traffic Control Devices (MUTCD) and the following:

GENERAL

The Contractor shall furnish, erect, maintain, wash, move, adjust, repair, relocate, re-erect, and store all temporary construction signs, sign mountings, portable barricades, traffic cones, drums, delineators, and other warning devices when, where, and as required by the Engineer.

CONSTRUCTION METHOD

Temporary Traffic Control devices shall cover all work related to the furnishing, installation, maintenance, and movement of traffic protective devices on the project. The Contractor shall provide a sufficient number of signs and other warning devices as required by the nature of the work as determined by the MUTCD and/or the Engineer. Devices that do not meet or exceed MUTCD standards will not be considered an acceptable means for temporarily controlling traffic.

When, in the opinion of the Engineer, the sign or device shall be so severely damaged as to warrant replacement, the Contractor shall provide a new device that shall be deemed to be included in this item without additional compensation.

The Contractor shall keep all signs, barricades, and other protective devices in proper position, clean, and legible at all times. Care shall be taken so that weeds, shrubbery, construction materials, equipment and spoil are not allowed to obscure any sign, lights, or barricade. Signs that do not apply to existing conditions shall be removed or adjusted so that the legend is not visible to approaching traffic. All signs and markers shall indicate actual conditions existing and shall be moved, removed, or changed immediately, as conditions require. When construction is not in progress, all unnecessary signs will be adequately covered.

No work is to be undertaken until the Contractor has established construction signs and/or safety devices around and about the project zone periphery. To that end, the Contractor shall not commence operations until he has verified that semi-permanent signs (i.e. 'Road Under Construction') and/or daily signing, (i.e. 'Detour') has been appropriately established. The Contractor shall be responsible for establishing supplemental signage, and/or safety devices, as he deemed necessary in order to further provide for the safety of the pedestrian and the motoring public, as well as for affording the opportunity to move the construction process forward without interruption.

Under the above clause, the Contractor shall work closely with the Engineer to coordinate the signing activities in a timely and reasonable manner. Said devices shall conform to the Temporary Traffic Control section of the most recent version of the Manual on Uniform Traffic Control Devices (MUTCD). Further, due to the nature of this work, the Contractor shall be required, from time to time, to erect, move, relocate, repair, and/or to remove at days end, any site sign in order to either expedite his work or to otherwise accommodate the safety and/or delineate the project zone and/or its active or inactive detour status and route line, and this work shall be done either at his discretion and/or at the request of the Engineer. Non-compliance with any such request, as herein described, shall be grounds for the City to halt work until such remedial measures have been taken, and any such loss of time by the Contractor shall be at his own expense. Any devices provided which are lost, stolen, destroyed, or deemed unacceptable while their use is required on the project shall be replaced without additional compensation.

The lump sum for this item shall include full compensation for all labor, equipment, materials, and incidentals needed to complete the following:

1. Fabricating, furnishing, erecting, maintaining, removing, and relocating the traffic management devices for the entire project duration, complete-in-place and as directed by the Engineer.

2. Providing additional traffic management devices to provide a clear and visible traffic control through the project area, if required.
3. The Contractor shall be required to reposition the traffic control devices as many times as necessary to ensure the safe passage of vehicular traffic and pedestrians. Supplemental signs and traffic control devices directing traffic around and/or through the work zones shall be supplied as operations require or as directed by the Engineer. Payment for these traffic control measures shall be included, as part of this item and no additional payment will be made.
4. The Contractor shall provide temporary pedestrian access ways when closing existing sidewalk or provide pedestrian detour in conformance with ADA/AAB and MUTCD requirements.
5. At a minimum, traffic control shall include the following:
 - a. Temporary Traffic Control Signs including detour signs as required.
 - b. Channelizing Devices including drum barricades and/or traffic cones.
 - c. Type III Barricades.
 - d. Temporary Barriers.
 - e. Temporary Pedestrian Bypass.
 - f. Temporary Pedestrian Curb Ramps

Other work, whether direct or incidental, associated with the traffic control not specifically identified herein.

BASIS OF PAYMENT

Work under this item shall be paid at the Contract Unit Price bid for Item 852.01 Temporary Traffic Control per Lump Sum. If, after notice by the City, signage is determined to be inadequate, the City may withhold payment on this item until it is addressed satisfactorily by the Contractor. The prices so-stated constitute full and complete compensation for all labor, materials, and equipment associated with, but not limited to, furnishing, erecting, maintaining, washing, movement, adjustment, repair, relocation, re-erection, storing of all temporary construction signs, sign mountings, portable barricades, traffic cones, delineators, drum barricades, channelizing devices, and all other devices, clean-up, legal disposal of all materials, and all other incidentals required to finish the work, complete and accepted by the Engineer. Any damage shall be the Contractor's responsibility.

ITEM 864.041	PAVEMENT ARROWS AND LEGENDS	SQUARE FOOT
	REFLECTORIZED MARKINGS (THERMOPASTIC)	
ITEM 866.104	4 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)	FOOT
ITEM 866.112	12 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)	FOOT

The work to be done under these items shall conform to the relevant provisions of Subsection 860 of the Standard Specifications and the following:

GENERAL

The work under these items consists of furnishing materials and the application of reflectORIZED thermoplastic pavement markings in accordance with these plans and specifications and the Massachusetts Department of Transportation Standard Specifications Subsection 860 and M7.0. This Item shall consist of furnishing materials and the application of reflector diagonal lines, and white, or yellow lines and white on blue background for the Accessible Parking Space graphic symbols in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

Before applying any striping, the Contractor shall lay out the proposed striping locations with temporary lines to assure proper alignment. The alignment of all pavement markings shall be approved by the City before installing permanent pavement markings.

All pavement markings shall be complete and installed **no later than 30 days** after the installation of the final roadway application materials.

MATERIALS

All materials under these items shall adhere to the appropriate items under Subsection 860 of the Standard Specifications, White Thermoplastic ReflectORIZED Pavement Markings – M7.01.03.

BASIS OF PAYMENT

Work under these Items shall be paid at the respective Contractor bid prices for Item 864.04 Pavement Arrows and Legends ReflectORIZED White (Thermoplastic) per Square Foot, Item 866.104 4 Inch ReflectORIZED White Line (Thermoplastic), and Item 866.112 12 Inch ReflectORIZED White Line (Thermoplastic) per Foot for the actual pavement marking installed. Such payment shall be considered full compensation for all labor, materials, equipment, and other incidentals necessary for the satisfactory completion of this work as specified.

The work under this Item shall conform to the relevant provisions of Subsection 828 of the Standard Specifications and the following:

GENERAL

Work to be done under this item shall include the dismantling, removal, transporting and resetting of existing signs at the locations indicated on the plans. The work also includes the removal and disposal of the existing sign supports and foundations.

The Contractor shall exercise particular care in the dismantling, removal, transporting and resetting of the existing signs designated to be reused. Any sign panel damaged by the Contractor shall be replaced at the Contractor's expense.

Signs, attachment hardware and sign support posts lost, damaged or otherwise made unsuitable for reuse while being removed, transported, stored or reset shall be replaced with new material at no additional cost to the Owner. New attachment hardware shall be furnished and installed as necessary to replace any missing or unusable existing hardware.

The existing signs shall not be removed and reset without permission from the City. The final location of signs shall be locate in the field with the City prior install.

The Contractor shall backfill with compacted gravel all holes resulting from the removal of the existing signs and their foundations and restores the area to match existing conditions of adjacent areas.

BASIS OF PAYMENT

The work under this item shall be paid for at the Contractor bid price per Each for Item 874.2 Traffic Sign Removed and Reset, which price shall include the dismantling, loading, transporting and resetting of signs as designated above, the excavation, removal and disposal of their supports and foundations, the gravel backfill, all labor, materials, equipment, and all incidental costs required to complete the work.

New posts, if required, will be paid for under Item 847.1. Sign Sup (N/Guide) + Rte Mkr W/1 Brkway Post Assembly – Steel per Each.

The work under this Item shall conform to the relevant provisions of Subsections 828 and 840 of the Standard Specifications and the following:

GENERAL

Work under this item shall include the dismantling, removing, transporting and stacking of the existing traffic signs as shown on the plans and as directed by the City.

The work shall include dismantling the signs, removing the posts, excavating the existing foundation, disposing of the concrete and posts, backfilling with compacted gravel of the holes resulting from the excavation, and the replacement, in kind, of any surface material disturbed. All removed traffic signs that are in good condition as determined by the City shall be transported and stacked to 110 Crafts Street, Newton Massachusetts or at the location as designated by the City. The Contractor shall exercise particular care in the dismantling, removal, transporting and stacking of the designated existing signs. Any sign panel designated for stacking that is damaged by the Contractor shall be replaced at the Contractor's expense.

Signs selected to be disposed of will be disposed of by the Contractor. This work shall be considered incidental to this item.

BASIS OF PAYMENT

Work under this item shall be paid at the Contractor bid prices per Each for Item 874.4 Sign Removed and Stacked, which price shall include full compensation of all labor, materials, equipment, dismantling, removing, transporting, and stacking of the signs, excavation and disposal of the existing foundations, supplying and backfilling with gravel and compaction, and all incidental costs required to complete the work. No separate payment will be made for the disposal of signs or removal of foundations or posts.

The work under this Item shall conform to the relevant provisions of Subsection 828 of the Standard Specifications and the following:

GENERAL

Work to be done under this item shall include the dismantling, removal, transporting and resetting of existing Library Entrance sign at the locations indicated on the plans.

The Contractor shall exercise particular care in the dismantling, removal, transporting and resetting of the existing signs designated to be reused. Any sign panel damaged by the Contractor shall be replaced at the Contractor's expense.

Signs, attachment hardware and sign support posts lost, damaged or otherwise made unsuitable for reuse while being removed, transported, stored or reset shall be replaced with new material at no additional cost to the Owner. New attachment hardware shall be furnished and installed as necessary to replace any missing or unusable existing hardware.

The existing signs shall not be removed and reset without permission from the City.

The Contractor shall backfill with compacted gravel all holes resulting from the removal of the existing signs and their foundations and restores the area to match existing conditions of adjacent areas.

BASIS OF PAYMENT

The work under this item shall be paid for at the Contractor bid price per Each for Item 874.8 Miscellaneous Sign Removed and Reset, which price shall include the dismantling, loading, transporting and resetting of signs as designated above, the excavation, foundations, removal and disposal of their supports and foundations, the gravel backfill, all labor, materials, equipment, and all incidental costs required to complete the work.

GENERAL

The Contractor shall include in his bid an allowance for payment of traffic control officers as approved by the Engineer. This allowance will be used as a basis for comparison of bids only.

Under this item the Contractor shall be responsible for ordering, and for canceling details on a day-to-day basis. In the event the Contractor has ordered police details and does not give the police department ample advance notice that work has been cancelled for that day due to inclement weather or for any other reason, then the Contractor shall bear the expense of that billed detail.

The Contractor shall completely familiarize himself with the current policies regarding and/or regulating police details.

In the event police detail requests cannot be completely filled to cover the Contractor's scheduled work for any particular day, then the Contractor shall adjust his work schedule accordingly and shall not hold the City responsible for any loss of time, or for any other financial loss. The City of Newton will however grant an extension of time to the original contract term for each day lost due to insufficient police staffing.

Uniformed Traffic Officers will be required during the construction period and shall be paid for directly by the City. It shall be the responsibility of the Contractor to arrange for the necessary police details when approved by the City for each police detail required. This request and approval may be verbal or in writing at the discretion of the City. **Forty-Eight (48) hour notice to the Police Department is required.**

The City will pay the exact charges for police details ordered, with the approval of the Engineer, by the Contractor for this project. There will be no administration fee, mark-ups, or any other additional costs paid to the Contractor.

If the Contractor fails to cancel any police detail not needed, by the required deadline, as set forth by the Newton Police Department, the cost for such detail as invoiced to the City shall be deducted from the total reimbursement to the Contractor, unless otherwise waived by the City. There will be no separate payment for the Contractor's coordination with the Police Department or City to obtain police details.

BASIS OF PAYMENT

Under Item 999., the Contractor shall submit paid invoices to the Engineer. The Contractor shall then be reimbursed the full invoice amount for City of Newton Police Department charges and/or, when applicable, for Massachusetts State Police charges, as full reimbursement under the allowance for payment of Police officers.

The original invoice issued by the billing authority must be submitted to the Engineer for payment under this item.

END OF SECTION

**Bidders are responsible for downloading the specifications
from the City's website www.newtonma.gov/bids.**

ORDER OF CONDITIONS AND DRAWINGS

(SEPARATE FILES)