December 2016

CITY OF
Quincy
MASSACHUSETTS

Lead Service Line Replacements
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1 GENERAL REQUIREMENTS

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2 SITE WORK

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Support of Excavation 02252
Earthwork 02300
Rock Excavation and Disposal 02324
Service Connection 02515
Reconstruction of Existing Sewers and Drains 02534
Paving 02745
Curbing 02771
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3 CONCRETE

Field Concrete 03302

15 MECHANICAL

Plumbing 15408

APPENDIX A: Wage Rates
APPENDIX B: List of Lead Water Services
APPENDIX C: Construction Details

END OF SECTION
INVITATION TO BID

The Department of Public Works for the City of Quincy, Massachusetts is seeking sealed bids for **Lead Service Line Replacements Project** until **11:30 a.m. local time Thursday, February 16, 2017**, in the office of the Purchasing Agent, 1305 Hancock St., Quincy, Massachusetts 02169, at which time and place all bids will be publicly opened and read aloud. Late bids delivered by mail or in person will be rejected.

The work includes the replacement of approximately 130 lead water services throughout the City. The scope of work includes replacement of the lead services, installation of new copper tubing and appurtenances on both public and private property, and the complete restoration of public and private property to pre-construction conditions.

Detailed specifications are available on-line at the City of Quincy’s website, [www.quincyma.gov](http://www.quincyma.gov) and also available at the Office of the Purchasing Agent, Quincy City Hall, 1305 Hancock Street, Quincy, Massachusetts, 02169, between the hours of 8:30 AM and 4:30 PM for a refundable printing charge of $50.00, if returned 10 days within Bid opening and in unused condition. Specifications will be available January 11, 2017.

A Pre-Bid Conference will be held on January 26, 2017 at 11:00 a.m. at the offices of the Department of Public Works, 55 Sea Street, Quincy, MA 02169. All bidders are encouraged to attend. Requests for interpretation of bid documents may be submitted in writing at that time.

All questions regarding this bid should be directed to Kathryn R. Hobin, Purchasing Agent, by emailing purchasing@quincyma.gov. Questions will be accepted until Friday, February 10, 2017 at 12:00 p.m.

All work under this contract shall be completed by September 30, 2017.

Each bid shall be accompanied by a bid security in the amount of five percent (5%) of the total value of the bid in the form of a bid bond or certified/treasurer’s check.

The bidding and award of this contract shall be in full compliance with Massachusetts General Laws, Chapter 30, Section 39M, as last revised. All applicable Federal, State and City of Quincy regulations in relation to Equal Employment Opportunity and subject to the minimum wage rates set under the Massachusetts Prevailing Wage Law Chapter 149, §26. The City reserves the right to waive any informalities in or to reject any or all bids when such an action is deemed in the best interests of the City.

**Non-responsive, and/or unbalanced bids may be rejected.**

Thomas P. Koch  
Mayor

Daniel G. Raymondi  
Commissioner of Public Works

Kathryn R. Hobin  
Purchasing Agent

Consulting Engineer: Weston & Sampson Engineers, Inc., Five Centennial Dr., Peabody, MA 01960

<table>
<thead>
<tr>
<th>Advertise</th>
<th>Req. No.</th>
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<tr>
<td>The Quincy Sun</td>
<td>January 12, 2017</td>
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<tr>
<td>The Central Register</td>
<td>January 11, 2017</td>
</tr>
<tr>
<td>COMMBUYYS</td>
<td>January 12, 2017</td>
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1305 Hancock St., Quincy MA 02169  
Telephone: (617) 376-1060  
Fax: (617) 376-1074

O:\Quincy MA\Lead Service Replacement Program 2160625\Specs - Year 1\00100 - Invitation to Bid - REV. 2013.09.docx  
00100-1
INSTRUCTIONS TO BIDDERS

ARTICLE 1 PROJECT IDENTIFICATION

1.1 Owner: City of Quincy, Massachusetts

1.2 Awarding Authority: Kathryn R. Hobin Purchasing Agent 1305 Hancock St., Quincy, MA 02169

1.3 Project Name: Lead Service Line Replacements

1.4 Funding: City of Quincy’s Water Enterprise Fund

Massachusetts Water Resources Authority (MWRA) Lead Service Line Replacement Program (Lead Loan Program or LLP)

1.5 The following Documents are required to be submitted with the Bids. Failure to comply with these requirements may render the Bid non-responsive and thus be disqualified.

   a. Bid Forms (all original signatures) (Section 00300).
   b. Bid Bond (Section 00305).
   c. Affidavits and Certifications (Section 00315).

ARTICLE 2 QUALIFICATIONS OF BIDDERS

2.1 Bidders may be investigated by the City to determine if they are qualified to perform the work. Bidders shall submit within five (5) calendar days of the City's or Engineer's request, written evidence of such information and data necessary to make this determination.

2.2 The investigation of a Bidder will seek to determine whether the organization is adequate in size, is authorized to do business in the project jurisdiction, has had previous experience and whether available equipment and financial resources are adequate to assure the City that the work will be completed in accordance with the terms of the Agreement. The amount of other work to which the Bidder is already committed may also be considered.

2.3 The City reserves the right to reject any Bid if the evidence submitted by, or the investigation of such Bidder fails to satisfy the City that such Bidder is properly qualified to carry out the obligations and the work included in the Contract Documents.
ARTICLE 3  COPIES OF CONTRACT DOCUMENTS

3.1 Complete sets of Contract Documents shall be used in preparing Bids; neither the City nor the Engineer assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents.

3.2 The City and the Engineer in making copies of Contract Documents available do so only for the purpose of obtaining bids on the Work and do not confer a license or grant permission for any other use.

ARTICLE 4  EXAMINATION OF CONTRACT DOCUMENTS AND SITE

4.1 Before submitting a Bid, each Bidder must a.) examine the Contract Documents thoroughly, b.) visit the site(s) to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the Work, c.) familiarize himself with Federal, State and local laws, ordinances, rules and regulations that may in any manner affect cost, progress, or performance of the Work; and d.) study and carefully correlate Bidder's observations with the requirements of the Contract Documents.

4.2 All information given in the Contract Documents relating to sub-surface and other conditions, natural phenomena, existing utilities, pipelines, other structures, etc. is from the best sources available to the City. All such information is furnished only for the information and convenience of the Bidders and is not guaranteed.

4.3 Before submitting the Bid, each Bidder may, at his own expense, make such additional investigations and tests as the Bidder may deem necessary to determine the accuracy of his Bid for performance of the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

4.4 On request, the City will provide each Bidder access to the site to conduct such investigations and tests as each Bidder may deem necessary for submission of the Bid.

4.5 The lands upon which the work is to be performed and rights-of-way for access thereto are identified in the Contract Documents.

4.6 The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Article 4 and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.
ARTICLE 5   INTERPRETATIONS

5.1 All questions about meaning or intent of the Contract Documents must be directed to Kathryn R. Hobin, Purchasing Agent by emailing purchasing@quincyma.gov. Questions will be accepted until Friday, February 10, 2017 at 12:00 p.m, or as set forth in the Invitation to Bid.

5.2 Written clarifications or interpretations will be issued through Addenda. No addenda will be issued any later than 48 hours before the bid opening date. Only questions answered by formal written Addenda will be binding. Oral and other clarifications or interpretations will be without legal effect. Addenda will be posted on-line at the City of Quincy’s website, www.quincyma.gov. Notification of Addenda will be emailed to all parties recorded to have received the Contract Documents. Potential bidders are requested to acknowledge that they have printed out the documents.

5.3 Each Bidder shall be responsible for determining all Addenda issued have been received and incorporated into the Bid.

5.4 A BID WHICH INCLUDES, FOR ANY ITEM, A BID PRICE THAT IS ABNORMALLY HIGH OR LOW, MAY BE REJECTED AS AN UNBALANCED BID.

5.5 The quantities in the Bid Form are being set forth as a basis for the comparison of bids only and the actual amount of work may not correspond therewith.

5.6 The City reserves the right to delete all or any portion of the work or add new work or to decrease or increase the scope of any item of the work to be done under this Contract either prior to executing the Contract or at any time during the life of the Contract. Exercise by the City of the above rights shall not constitute any grounds or basis of claims for damages or for a loss of anticipated profits.

Also, an increase or a decrease of quantity for any bid item (regardless of its magnitude) shall not be regarded as a grounds or basis for any increase or decrease in the Contract unit prices, nor in the time allowed for the completion of the work except as provided for in the Contract.

ARTICLE 6   PRE-BID CONFERENCE: A pre-bid conference will be held on January 26, 2017 at 11:00am at the offices of the Department of Public Works, 55 Sea Street, Quincy, MA 02169. All bidders are encouraged to attend.

ARTICLE 7   BID SECURITY

7.1 Each bid must be accompanied by a bid bond, in cash or certified check or a treasurer's/cashiers check issued by a bona fide bank or trust company, payable to the City of Quincy. The Bid Security shall be in the amount of five percent (5%) of the Total Bid Price. The Bid
Security shall be sealed in a separate envelope from the Bid and then attached to the envelope containing the Bid. All Bid Securities except those of the three lowest responsible and eligible bidders will be returned within ten calendar days after the opening of bids. All Bid securities will be returned on the execution of the Agreement, or if no award is made, within sixty calendar days after the actual Bid Opening Date, unless the bid security is forfeited under the conditions stipulated herein.

7.2 In case a party to whom a Contract is awarded shall fail or neglect to execute the Agreement and furnish the satisfactory bonds within the time specified, the City may determine that the bidder has abandoned the Contract, and thereupon the Bid Forms and acceptance thereof shall be null and void, and the Bid Security accompanying the Bid Form shall be forfeited to the City as liquidated damages for such failure or neglect and to indemnify the said City for any loss which may be sustained by failure of the Bidder to execute the Agreement and furnish the bonds aforesaid, provided that the amount forfeited to the City shall not exceed the difference between the Bid Price of said Bidder and that of the next lowest responsible and eligible Bidder and provided further that, in case of death, disability or other unforeseen circumstances affecting the Bidder, such Bid Security may be returned. After execution of the Agreement and acceptance of bonds by the City, the Bid Security accompanying the Bid Form of the Successful Bidder will be returned.

ARTICLE 8 PERFORMANCE, PAYMENT AND OTHER BONDS

8.1 Performance, Payment and other required bonds and project Insurance Certificates shall be provided in accordance with Article 5 of the General Conditions of the Contract.

8.2 All Bonds required as Contract Security shall be furnished prior to the execution of the Agreement.

ARTICLE 9 BID FORMS

9.1 Each Bid shall be submitted on the Bid Form included in this Project Manual. All blank spaces for Bid prices must be filled in with unit or lump sum prices for each of the items for which the bid is requested.

9.2 Bid Forms shall be completed in ink or be typewritten. The Bid price of each item on the form shall be stated in words, and figures. Discrepancies between unit prices and their respective total amounts will be resolved in favor of the unit prices. Discrepancies between words and figures will be resolved in favor of words. Discrepancies between the indicated sum of any column of figures and correct sum thereof shall be resolved in favor of the correct arithmetic sum, based on words.

9.3 Bids by corporations shall be executed in the corporation name, by the Chief Executive Officer (or other corporate officer). The bid must be accompanied by evidence of authority to sign the bid and the corporate seal shall be affixed and attested to by the secretary. The corporate address
and state of incorporation shall be shown below the signature.

9.4 Bids by partnership shall be executed in the partnership name and signed by a partner, whose title shall appear under the signature. The official address of the partnership shall be shown below the signature.

9.5 All names shall be typed or printed below the signature.

9.6 The Bid shall confirm the receipt of all Addenda. Actual number of Addenda received shall be filled in on the Bid Form.

9.7 The address and telephone number of the person to whom communications regarding the Bid are to be directed shall be shown.

9.8 Bids shall be submitted (original signatures) in a sealed opaque envelope bearing on the outside the Bidder's name, address, and the Project Title for which the Bid is submitted. If forwarded by mail, the Bid shall be enclosed in a sealed envelope with the notation "BID ENCLOSED" on the face and address as above. The Bid Security shall be submitted in a separate envelope from the Bid and attached to the sealed envelope containing the bid.

ARTICLE 10 RECEIPT OF BIDS

10.1 Sealed bids for the work under this Contract will be received at the time and place indicated in the Invitation to Bid.

10.2 The City may consider informal any Bid not prepared and submitted in accordance with the provisions hereof.

10.3 Bidders are cautioned that it is the responsibility of each individual Bidder to ensure that the bid is in the possession of the responsible official or a designated alternate prior to the stated time and at the place of the Bid Opening. The City is not responsible for bids delayed by mail and/or other forms of delivery.

ARTICLE 11 MODIFICATION AND WITHDRAWAL OF BIDS

11.1 Bids may be modified only by an appropriate document duly executed and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

11.2 Bids may be withdrawn prior to the scheduled Bid Opening time or the authorized postponement thereof.

11.3 Bids, once officially opened, cannot be withdrawn and shall remain open for a period of sixty (60) calendar days from the date of the opening. The City, at its sole discretion, may release any bid
and return the Bid Security prior to that date.

**ARTICLE 12 AWARD OF CONTRACT**

12.1 The Contract will be awarded to the lowest responsible and eligible bidder (Successful Bidder). Such a Bidder shall possess the skill, ability, job-related prior work experience, and integrity necessary for the faithful performance of the work and the bid, apart form being complete and responsive, is the lowest in price of all the bids opened.

12.2 The City reserves the right to reject any and all Bids, to waive any and all informalities, if it is in the City's best interest to do so, and the right to disregard all nonconforming, non-responsive, unbalanced and conditional Bids.

12.3 The City also reserves the right to reject the Bid of any Bidder who is considered to be unqualified in accordance with Article 2, above.

12.4 If the Contract is to be awarded, the City will give the Successful Bidder a Notice of Award within sixty (60) calendar days after the actual Bid Opening Date. The Notice of Award will have to be formally acknowledged and accepted by the Bidder within the time period stipulated herein.

12.5 The acceptance of the above Notice of Award shall be accompanied by a complete list of subcontractors (specialty, suppliers, and sub-consultants, etc.) selected by the Bidder to work on the project. The list shall contain information on the percentage of total work (material, labor, equipment and services) allocated to each sub-contractor.

**ARTICLE 13 EXECUTION OF AGREEMENT**

13.1 When the City gives a Notice of Award to the Successful Bidder, it will be accompanied by at least six (6) unsigned copies of the Agreement and all other applicable Contract Documents. Within ten (10) calendar days from the date of such notification, Contractor shall execute and return all copies of the Agreement and all other applicable Contract Documents to the City. Within ten (10) calendar days thereafter, the City will deliver one fully signed copy along with the "Notice to Proceed" to the Contractor.

13.2 If for any reason the Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement between the City and the Contractor. If the Notice to Proceed has not been issued within the ten (10) calendar days after signing of the Agreement, or within the time period mutually agreed upon, the Contractor may terminate the Agreement without further liability on the part of either party.

13.3 The Bidder's attention is directed to special requirements in relation to project construction work and completion schedule, specified in Division One - Technical Requirements Sections in this Project Manual. Each Bidder is urged to study these requirements to insure compliance with the
same before submitting the Bid.

ARTICLE 14 SAFETY AND HEALTH REGULATIONS

14.1 This Project is subject to all of the Safety and Health Regulations (CFR 29, Part 1926 and all subsequent amendments) as promulgated by the U.S. Department of Labor on June 24, 1974, and CFR 29, Part 1910, General Industry Safety and Health Regulations Identified as Applicable to Construction.

14.2 The Successful Bidder shall comply with the Department of Labor Safety and Health Regulations for Construction promulgated under the Occupational Safety and Health Act of 1970 (PL-91-596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL-91-54).

14.3 The Successful Bidder shall have a competent person or persons, as required under the Occupational Safety and Health Act on the site to inspect the Work and to supervise the conformance of the Work with the regulations of the Act.

14.4 This project is also subject to the Massachusetts Department of Labor and Industries Division of Industrial Safety "Rules and Regulations for the Prevention of Accidents in Construction Operations (Industrial Bulletin No. 12)".

ARTICLE 15 SALES TAX

15.1 The materials and supplies to be used in the Work shall be exempt from all applicable Federal, State and local sales taxes.

ARTICLE 16 UTILITY UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

16.1 All excavations within public or private ways are subject to the requirements of Massachusetts General Laws, Acts of 1983, Chapter 252, included in Part II of the Supplementary Conditions.

ARTICLE 17 WAGE RATES

17.1 All work done under this Contract shall be subject to compliance with the minimum wage rates as mandated by the Commonwealth of Massachusetts Department of Labor and Industries and the U.S. Department of Labor Wage Rates issued in the most recent wage decisions applicable to the project area.

17.2 The Commonwealth of Massachusetts Minimum Wage Rates issued under the provisions of the Massachusetts General Laws, Chapter 149, Section 26 to 27G, as amended, shall apply to the
projects when the use of Federal funds is not involved on a particular project.

17.3 The Schedule of Minimum Wage Rates are included as part of this project manual and shall be strictly enforced.

17.4 It is the responsibility of the Contractor, before submitting the Bid, to verify the minimum wage rates and to request, if necessary, any additional and/or the latest information on wage rates for all tradespeople to be employed under this contract.

ARTICLE 18 COMPETITIVE BIDDING

18.1 The Bidding and award of this contract shall be in full compliance with the Federal Procurement Act and with MGL Chapter 30, Section 39M, as last revised.

ARTICLE 19 GUARANTEES

19.1 In addition to other guarantees due the City, the Contractor guarantees that the Work and services to be performed under the Contract, and all workmanship, materials, and equipment furnished, used or installed shall be free from defects and flaws, and shall be in strict accordance with the Drawings, Specifications, and other Contract Documents. Also, the strength of all parts of all manufactured equipment shall be adequate and as specified and that the performance test requirements of the Contract shall be fulfilled. This guarantee shall be for a period of one year from and after the date of Substantial Completion and acceptance of the Work unless otherwise specified herein.

The Performance Bond shall remain in full force and effect throughout the Guarantee Period.

19.2 If at any time within the said period of guarantee, any part of the Work requires repairs, correction and/or replacement, the City may notify the Contractor in writing to make the required repairs, correction or replacement. If the Contractor neglects to commence making such repairs, corrections, or replacements to the satisfaction of the City within ten (10) days from the date of receipt of such notice, or having commenced said repairs, corrections or replacement, fails to prosecute such work with diligence, the City may employ other person(s) to make the same, and all direct and indirect costs of making said repairs, corrections or replacements, including compensation for additional professional services, shall be paid by the Contractor.

ARTICLE 20 LABOR DISPUTES

20.1 The Bidder shall submit a written statement as to whether it has been the subject of, or otherwise been involved in any labor dispute during the past five (5) years. If the bidder has been the subject of, or otherwise been involved in any labor dispute during this period, the Bidder must also provide a detailed description of each labor dispute, including the name and location of the project worked on, the nature of the dispute, the duration and dates during which the dispute took place and how the dispute was resolved. For these purposes, "labor disputes" shall include picketing or any
other activity which disrupted or delayed the Work.

ARTICLE 21  RECORD KEEPING

21.1 The Contractor is reminded that the provisions of Chapter 30, Section 39R relative to record keeping apply to this Contract. A copy of c.30, s.39R is included in the Supplementary Conditions. A brief summary of the requirements is as follows:

a. The Contractor and all sub-contractors shall maintain books, records and accounts at least six (6) years after the final payment. They will be subject to inspection by the awarding authority, officers of the Inspector General, or the Deputy Commissioner of Capital Planning and Operations.

b. Any changes in record keeping or recording transactions which affect the awarding authority shall be explained along with a letter from the Contractor's independent certified public accountant approving or otherwise commenting on the change.

c. The Contractor shall file with the awarding authority a statement of management as to whether the system of internal accounting controls has been established.

d. The Contractor shall file with the awarding authority a statement prepared and signed by an independent certified public account that an examination has been made of internal accounting controls.

ARTICLE 22  LAWS AND REGULATIONS

22.1 All applicable laws, ordinances and rules and regulations of all Public Agencies having jurisdiction over construction of the project shall apply to the Contract throughout.

22.2 This project is subject to all of the OSHA Safety and Health Regulations (see CFR Part 1926/1910 and all subsequent amendments), as promulgated by the United States Department of Labor on June 24, 1974 and MGL Chapter 454 CMR 10.00, et.seq.; The Prevention of Accidents and Illnesses in Construction Operations. Contractors shall become familiar with the requirements of these regulations.

22.4 This Contract is subject to all the Federal Government, Commonwealth of Massachusetts, and City of Quincy Equal Employment Opportunity, Anti-discrimination and Affirmative Action Programs. The text of the program is set forth in these specifications. Contractor's and sub-contractors certifications will be required by the City prior to execution of the Contract.

Kathryn Hobin
Purchasing Agent
SECTION 00300
FORM OF GENERAL BID

Proposal of ________________________________ (hereinafter called "Bidder")*

( ) a corporation, organized and existing under the laws of the State of ____________

( ) a partnership

( ) a joint venture

( ) a limited liability company

( ) an individual doing business as __________________________

*Insert corporation, partnership, joint venture, LLC or individual as applicable.

To the ____________________________ (hereinafter called "Owner").

Gentlemen:

The undersigned Bidder, in compliance with your invitation for bids for construction of the Lead Service Line Replacements, having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all superintendence, labor, services, materials, equipment, plant, machinery, apparatus, appliances, tools, supplies, bailing, shoring, removal, and all other things necessary to construct the project in accordance with the contract documents, as prepared by Weston & Sampson Engineers, Inc., within the time set forth below, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the contract documents, of which this bid is a part.

The Bidder hereby agrees that if selected as the Contractor it will commence work under this contract on or before a date to be fixed in the written “Notice to Proceed” given by the Owner to the Contractor and to fully complete the project by September 30, 2017. The Bidder further agrees to pay as liquidated damages the sum of $1,000.00 for each consecutive calendar
day thereafter during which the work has not been fully completed, as provided in the “Liquidated Damages” provisions of Section 00800 SUPPLEMENTARY CONDITIONS.

Bidder acknowledges receipt of the following addenda:

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The Bidder agrees to perform the work described in the specifications and shown on the plans for the following lump sum or unit prices:

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<th>Item No.</th>
<th>Estimated Quantity*</th>
<th>Brief Description</th>
<th>Unit or Lump Sum Price</th>
<th>Bid in Both Words and Figures</th>
<th>Total in Figures</th>
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<td>1</td>
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<td><strong>General:</strong></td>
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<td>1a</td>
<td>Lump Sum Mobilization (not to exceed 5% of total bid), lump sum</td>
<td>$ ___________________</td>
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<td></td>
<td>7,200 l.f.</td>
<td>2a</td>
<td>1-inch copper piping, per linear foot</td>
<td>$ ___________________</td>
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<td></td>
<td>20 units</td>
<td>2b</td>
<td>1-inch corporation stops, per unit</td>
<td>$ ___________________</td>
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*Quantity assumed for comparison of bids.
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<tr>
<th>Item No.</th>
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<th>Brief Description Unit or Lump Sum Price Bid in Both Words and Figures</th>
<th>Total in Figures</th>
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<td>80 units</td>
<td>1-inch curb stops, per unit</td>
<td>$</td>
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<tr>
<td>2d</td>
<td>130 units</td>
<td>Curb box, per unit</td>
<td>$</td>
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<td>(dollars)</td>
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<tr>
<td>3</td>
<td></td>
<td><strong>Service Material Exploration Excavation:</strong></td>
<td></td>
</tr>
<tr>
<td>3a</td>
<td>50 Excavations</td>
<td>Service material exploration excavation, per excavation</td>
<td>$</td>
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<td></td>
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<td>(dollars)</td>
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<tr>
<td>4</td>
<td></td>
<td><strong>Test Pits:</strong></td>
<td></td>
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<tr>
<td>4a</td>
<td>50 cu. yd.</td>
<td>Test pits, per cubic yard</td>
<td>$</td>
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<td></td>
<td></td>
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<td>(dollars)</td>
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<td>($              )</td>
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</tbody>
</table>

*Quantity assumed for comparison of bids.

00300-3
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Estimated Quantity*</th>
<th>Brief Description</th>
<th>Unit or Lump Sum Price</th>
<th>Bid in Both Words and Figures</th>
<th>Total in Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
<td><strong>Sewer and Drain Reconstruction:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5a</td>
<td>5</td>
<td><strong>Reconstructions</strong></td>
<td>Sewer and drain reconstruction within water trench limits, per reconstruction</td>
<td>$__________________</td>
<td></td>
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<td></td>
<td>($___________</td>
<td>($)___</td>
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<tr>
<td>6</td>
<td></td>
<td><strong>Rock Excavation and Disposal:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6a</td>
<td>100 cu. yd.</td>
<td>Rock excavation and disposal, per cubic yard</td>
<td>$__________________</td>
<td></td>
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<td>($___________</td>
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<tr>
<td>7</td>
<td></td>
<td><strong>Earthwork:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7a</td>
<td>50 cu. yd.</td>
<td>Unsuitable material above normal grade, per cubic yard</td>
<td>$__________________</td>
<td></td>
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<td></td>
<td></td>
<td>($___________</td>
<td>($)___</td>
</tr>
<tr>
<td>7b</td>
<td>25 cu. yd.</td>
<td>Unsuitable material below normal grade, per cubic yard</td>
<td>$__________________</td>
<td></td>
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<td>($___________</td>
<td>($)___</td>
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</tbody>
</table>

*Quantity assumed for comparison of bids.
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Estimated Quantity*</th>
<th>Brief Description Unit or Lump Sum Price</th>
<th>Total in Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>7c</td>
<td>25 cu. yd.</td>
<td>Additional earthwork below normal grade, per cubic yard</td>
<td>$ ____________</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(dollars) and (cents) ($ __________________ )</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>50 cu. yd.</td>
<td>Controlled Density Fill, per cubic yard</td>
<td>$ ____________</td>
</tr>
<tr>
<td>9</td>
<td>800 l.f.</td>
<td>Trench Pavement, per linear foot</td>
<td>$ ____________</td>
</tr>
<tr>
<td>10</td>
<td>100 Locations</td>
<td>Exterior repair and restoration of private property, per location</td>
<td>$ ____________</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(dollars) and (cents) ($__________________ )</td>
<td></td>
</tr>
</tbody>
</table>

*Quantity assumed for comparison of bids.
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Estimated Quantity*</th>
<th>Brief Description Unit or Lump Sum Price</th>
<th>Total in Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>10b</td>
<td>600 hours</td>
<td>Interior repair and restoration of private property, per hour</td>
<td>$ __________________</td>
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<td></td>
<td></td>
<td>(dollars)</td>
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<td>(cents)</td>
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<td>($ __________________ )</td>
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</tr>
<tr>
<td>11</td>
<td>On-Call Licensed Plumber:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11a</td>
<td>300 hours</td>
<td>On-call licensed plumber, per hour</td>
<td>$ __________________</td>
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<td></td>
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<td>(dollars)</td>
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<td>($ __________________ )</td>
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<tr>
<td>12</td>
<td>Uniformed Officers:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12a</td>
<td>1,500 hours</td>
<td>Uniformed officers, per hour</td>
<td>$ 66,000.00</td>
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<tr>
<td></td>
<td></td>
<td>Forty-four</td>
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<td></td>
<td></td>
<td>(dollars)</td>
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<td>(cents)</td>
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<td></td>
<td></td>
<td>($ 44.00 __________________ )</td>
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</tr>
</tbody>
</table>

**TOTAL OF BID**

The proposed contract price for all Items 1 through 12 inclusive is:

Dollars and __________________ Cents ($ __________________ ).

All entries shall be made clearly in ink or typewritten. Amounts are to be shown in both words and figures. In case of discrepancy between the prices written in words and those written in figures, the amount shown in words shall govern. In the event there is a discrepancy between the unit prices and the total sum of all of the items (the proposed contract price), the unit prices shall govern.

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

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

The contract will be awarded to the lowest eligible and responsible bidder.

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

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

Within 10 days of receipt of the written notice of acceptance of this bid, the Bidder will execute the formal agreement attached in Section 00500 AGREEMENT.

Bid security is attached in the sum of five percent (5%) of the total bid in accordance with the conditions of Section 00200 INSTRUCTIONS TO BIDDERS. The bid security may become the property of the Owner in the event the contract and bond are not executed within the time set forth above.

The selected Contractor shall furnish a performance bond and a payment bond in an amount at least equal to one hundred percent (100%) of the contract prices in accordance with Section 00540 PERFORMANCE BOND, Section 00542 PAYMENT BOND, and as stipulated in paragraph 5.01 of Section 00700 GENERAL CONDITIONS of these specifications.

Pay estimate forms and record keeping of pay item quantities shall be as discussed in Section 01270, MEASUREMENT AND PAYMENT.

*Quantity assumed for comparison of bids.
BID FORM

The Bidder hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work and that he will comply fully with all laws and regulations applicable to awards made in the Commonwealth of Massachusetts.

The Bidder 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 herein, the word "person" shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.

Interest of Officers and Employees of the City of Quincy or Members of the City Council or Other Public Officials: No officer, member or employee of the City of Quincy or its designees or agents, and no member of its governing body, and no other public official of the governing body of the locality or localities in which the project is situated or being carried out, who exercises any functions or responsibilities in the review or approval or the undertaking or carrying out of this project, shall participate in any decisions relating to this Contract, which affects his personal interest or the interest of any corporation, partnership, or association in which he is directly or indirectly interested or have any personal or pecuniary interest, direct or indirect, in this contract or the proceeds thereof.

The undersigned, as Bidder, declares that he has carefully examined the proposed form and has fully informed and satisfied himself as to the existing conditions, the character and requirements of the proposed work, the difficulties attendant upon its execution; and the accuracy of all estimated quantities stated in this bid and that he has carefully read and examined the form of contract, the standard specifications and plans therein referred to, and he proposes and agrees, if this proposal is accepted, that he will contract with the Party of the First Part to provide all necessary labor, equipment, tools, apparatus and other means of construction and to do all the work and furnish all the materials specified in the contract in the manner and time therein prescribed and according to the requirements of the City of Quincy as therein set forth and that he will take the payment therefore, the prices stated in the Bid.

The undersigned, as Bidder, declares that he understands that information relative to sub-surface and other conditions, natural phenomena, existing pipes and other structures (surface and/or sub-surface) has been furnished only for his information and convenience without any warranty or guarantee, expressed or implied, that the structures (surface and/or sub-surface) actually encountered will be the same as those shown on the drawings or in any of the other contract documents, and he agrees that he shall not use or be entitled to use any such information made available to him through the contract documents or otherwise, or obtained by him in his own examination or the site, as a basis or grounds for any claim against the City of the Engineer arising from or by reason of any variance which may exist between the aforesaid information made available to or acquired by him and the sub-surface and/or other conditions, natural phenomena, existing pipes and other structures surface and/or sub-surface) encountered during construction, and that due allowance therefore has been made in this bid.

*Quantity assumed for comparison of bids.
The undersigned, as Bidder, understands that the quantities of work tabulated in this bid or indicated on the drawings or in the specifications or other contract documents are only approximate and are subject to increase or decrease, as deemed necessary by the Engineer.

The undersigned, as Bidder, agrees that for extra work, if any, performed in accordance with the terms and provisions of the annexed form of Agreement, he will accept compensation as stipulated therein as full payment for such extra work.

If this proposal shall be accepted and the Bidder shall fail to contract as aforesaid and to give a Bond in the sum to be determined as aforesaid with surety satisfactory to the City of Quincy within ten (10) days from the date of the mailing of the Notice of Award from the City of Quincy to him, according to the address herewith given, the City of Quincy may, at its option, determine that the bidder has abandoned the contract, and thereupon this proposal and acceptance thereof shall be null and void, and the certified check or bid submitted covering this proposal shall become the property of the City of Quincy, otherwise said certified check or bid bond shall be returned to the Bidder.

This bid must bear the written signature of the Bidder, or an authorized agent of the bidder. If the bidder is a corporation or a partnership, the bid must be signed by a duly authorized officer of such corporation or partnership, and the title of such an officer must be stated.

The Bidder offers the following information as evidence or qualifications to perform the work as bid in accordance with the requirements of the plans and specifications.

*Quantity assumed for comparison of bids.
BID FORM

RELEVANT PREVIOUS EXPERIENCE

The Bidder shall list below the relevant prior work experience on similar projects, and give references that will enable the City to evaluate his qualifications to perform the work under this Contract. The length of the relevant experience must be at least 5 years on projects of comparable size and complexity. The evaluation shall be based on prior experience, work performance and level of key personnel skills, and business standing (add additional page if necessary).

I. PROJECTS

<table>
<thead>
<tr>
<th>Completion Date</th>
<th>Project Name</th>
<th>Contract Amount</th>
<th>Design Reference Engineer</th>
<th>Reference Name</th>
<th>Phone No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
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<tr>
<td>b.</td>
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<td>c.</td>
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<tr>
<td>d.</td>
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<td>e.</td>
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<tr>
<td>f.</td>
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</tbody>
</table>

II. KEY PERSONNEL:

Key personnel to be employed on the job, in the event of contract award. Attach brief education and experience where applicable.

1.                           
2.                           
3.                           
4.                           
BID FORM

STATEMENT OF BIDDER'S QUALIFICATIONS

All questions must be answered and the date given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheet. The bidder may submit any additional information, if desired.

1. Name of Bidder:

2. Permanent main office address:
   a. Treasury Number (Employer's Identification No.):

3. When organized?

4. If a corporation, where incorporated?

5. How many years have you been engaged in the contracting business under your present firm or trade name?
   a. Names and home addresses of principal officers and their social security numbers: (attach separate sheet).

6. Contracts on hand: (Schedule these, showing gross amount of each contract and the approximate anticipated dates of completion. Name and address of client and name of person supervising for client.) (Attach separate sheet)

7. General character of work performed by your company?

8. Have you ever failed to complete any work awarded to your? If so, where and why?

9. Have your ever defaulted on a contract? If so, where and why?

10. List the more important contracts recently completed by you stating approximate cost of each, and the month and year completed. (Give names and addresses of client and name of person supervising for client). (See attached form.)

11. List your major equipment available for this contract. (Use separate sheet)

12. Experience in construction work similar in importance to this project. (See form)

13. Background and experience of the principle members of your organization, including the officers.
14. Credit available: $__________________

15. Give bank reference, including bank name, address, telephone and contact name.

16. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required?

17. The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the City of Quincy in verification of the recitals comprising this Statement of Bidder's Qualifications.

   Dated this _________ day of ______________________, 20__.

   Name of Bidder: ____________________________________________

   By: ________________________________________________________

   Title: ______________________________________________________

State of __________________________

County of __________________________

__________________________________________ being duly sworn,

deposed and says that he is _________________________________

  (office)

of ________________________________________________

  (Name of Organization)

and that the answers to the foregoing questions and all statements contained therein are true and correct.

SUBSCRIBED AND SWORN TO, before me the _____ day of _________________, 20__

___________________________________________

  (Notary Public) Seal

My commission expires: ________________________________
Signature Authorization

At a duly authorized meeting of the Board of Directors of

(NAME OF CORPORATION)

held on ____________ at which all the Directors were present or

(DATE)

waived notice, it was VOTED, that:

(NAMES)

(OFFICER)

of this company, be and he/she hereby is authorized to execute Contracts and

Bonds in the name and behalf of said Company, and affix its Corporate Seal

thereto; and such execution of any Contract or obligation in this Company's

name on its behalf by such

(OFFICER)

under seal of the Company, shall be valid and binding upon this Company. It

was further voted that the City of Quincy may rely on such authorization for

future Contracts until notified to the contrary.

A true copy,

ATTEST:

(CLERK'S SIGNATURE)

PLACE OF BUSINESS:

DATE OF THIS CONTRACT:

I hereby certify that I am the Clerk of the:

(COMPANY)

(NAME)

that_________________________ is

the duly elected ___________________________ of said Company, and

(TITLE)

that the above VOTE has not been amended or rescinded and remains in full

force and effect as of the date of this Contract.

(CLERK'S SIGNATURE)

CORPORATE SEAL
CERTIFICATE OF ACKNOWLEDGEMENT
OF CONTRACTOR FOR BID

State of ____________________________  | Date: ______________________, 20______
County of ____________________________

On this ______ day of ____________________________, 20______,
before me personally appeared ________________________________________

who being duly sworn, did depose and say as follows:

__________________________________________________________, that said firm consists of
(Company Name)

__________________________________________________________
(name of principals in firm and position)

__________________________________________________________

that he executed the foregoing instrument on behalf of said firm for the uses and purposes stated herein. If a
 corporation, the seal affixed to the foregoing instrument is such corporate seal and it was so affixed by order of the
 Board of Directors of said corporation, and that by like order, he signed thereto his name and official designation.

__________________________________________________________
(Notary Public)  (Seal)

My commissioner expires: ________________________________
SIGNATURE PAGE

DATED: __________________________________________

BY: ________________________________________________
    (Signature and Title of Person Authorized to Sign Bid)

______________________________________________
    (Name of General Bidder)

______________________________________________
    (Business Address)

______________________________________________
    (Social Security Number - Federal Tax ID No.)

Telephone Number: ________________________________

(SEAL: IF BID IS BY A CORPORATION)

ATTEST: __________________________________________

The proposed surety company on the bond to be given as follows:

______________________________________________
    (Contact Name)

______________________________________________
    (Name of Surety)

______________________________________________
    (Address of Home Office)

______________________________________________
    (Massachusetts Address, if different)

______________________________________________
    (Business Telephone)
BID BOND

KNOW ALL MEN BY THESE PRESENT, that we, the undersigned, _______________________
___________________________________________ as Principal and
___________________________________________ as Surety, are hereby held and firmly bound unto
___________________________________________ as OWNER in the penal sum of _______________________
for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves,
successors and assigns _______________________.

Signed this ______ day of _________________, 20____.

The Condition of the above obligation is such that whereas the Principal has submitted to:
___________________________________________ a certain BID, attached hereto and hereby made a part hereof
to enter into a contract in writing for the:

NOW, THEREFORE,

(A) If said BID shall be rejected, or

(B) If said BID shall be accepted and the Principal shall execute and deliver a contract in
the Form of Contract attached hereto (properly completed in accordance with said
BID) and shall furnish a BOND for his faithful performance of said contract, and for
the payment of all persons performing labor, or furnishing materials in connection
therewith, and shall in all other respects perform the agreement created by the
acceptance of said BID,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being
expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall,
in no event, exceed the penal amount of this obligation as herein stated.

00305-1
The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall in no way be impaired or affected by any extension of the time within which the OWNER may accept such BID, and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these present to be signed by their proper officers the day and year first set forth above.

_______________________________ (L.S.)
Principal

_______________________________
Surety

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department’s most current list (Cir. 570, as amended) and be authorized to transact business in the state where the project is located.
RIGHT-TO-KNOW LAW

A bidder will not be eligible for award of this contract under this invitation for bids unless such bidder has submitted as part of its bid the following certification which will be deemed a part of the resulting contract.

CERTIFICATION

The Bidder hereby certifies that, if awarded this contract, he will fully comply with the Massachusetts Right-To-Know Law, c.470 of the Acts of 1983, (the Act). In addition, he shall:

1. obtain a Material Safety Data Sheet (MSDS), for all substances or mixtures of which appear on the Massachusetts Substance List that he or any of his subcontractors brings to or uses on the worksite and will keep a copy of the MSDS on the worksite of this contract;

2. label each container of a substance or mixture of substances on the Massachusetts Substance List, as required, in section 7 of the Act;

3. provide the same training and non-technical instruction that he is required to provide under section 15 of the Act to all Quincy personnel. Training shall include instructing on the nature and effects of any substance or mixture of substances listed on the Massachusetts Substance List which the Bidder or any of his subcontractors brings to or uses on the worksite.

4. provide to Quincy DPW employees on the worksite the same protective equipment that the bidder or any of his subcontractors provides to his employees.

______________________________________________
Signature of Authorized Representative of Bidder

Bidder's Name: ___________________________________

Bidder's Address: _________________________________
NON-COLLUSION AFFIDAVIT

A bidder will not be eligible for award of this contract under this invitation for bids unless such bidder has submitted as part of its bid the following certification which will be deemed a part of the resulting contract.

State of __________________________

Date: ________________ 20____

County of __________________________

The undersigned being duly sworn, deposes and says that he is the:

________________________________________________________________________________

(sole owner, partner, president, treasurer, or other duly authorized official)

Of __________________________________________________________________________

(name of company - bidder - as appears in submitted proposal)

for work in __________________________ on __________________________

(City/Town) (Bid Opening Date)

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

________________________________________
Signature/Title of Person Making Affidavit

Sworn to before me this:

_____________ day of __________________________ 20____

________________________________________
(Notary Public)

My commission expires: ________________ 20____
CERTIFICATION OF NON-SEGREGATED FACILITIES

The Bidder certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under this control, where segregated facilities are maintained. The Bidder certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments and that he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The Bidder agrees that a breach of this certification will be a violation of the Equal Opportunity clause in any contract resulting from acceptance of this bid. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms, and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion or national origin, because of habit, local custom or otherwise. The Bidder agrees that (except where he has obtained identical certification from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000.00 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certifications in his file.

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. ss.1001.

Date:____________________, 20____

(Name of Bidder)

Official Address (including Zip Code)

By:_____________________________

(Title)
AFFIDAVIT REGARDING PRIOR LABOR DISPUTES

The Bidder must execute and complete the following statements as to whether it has been the subject of, or otherwise been involved in, any labor dispute during the past five (5) years. If the Bidder has been the subject of, or otherwise been involved in any labor dispute during this period, the bidder must also provide a detailed description of each labor dispute, including the name and location of the project worked on, the nature of the dispute was resolved. For these purposes, "labor disputes" shall include picketing or any other activity which disrupted or delayed the work.

I __________________________________________, being first duly sworn, do hereby depose/state:

(Name)

1. I make each of the following statements with full authorization to bind

________________________________________________________________________

(Name of Bidder)

2. ______________________________________________________________________

(Name of Bidder)

as described above, within the past five (5) years.

3. (Complete only if bidder has been involved in dispute).

The dispute(s) occurred on the following project(s). (Use separate sheet if necessary)

<table>
<thead>
<tr>
<th>Name and Location of Project</th>
<th>Date Dispute Began</th>
<th>Date Concluded</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ___________________________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. ___________________________</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Attach separate sheet and give full description of the nature of each dispute and an explanation of how it was resolved. (Please give a full description below, for each such dispute).

Signed under the penalty of perjury this _____ day of _____________, 20___.

BY: __________________________________________

on behalf of: __________________________________________

(company name)
NOTICE OF AWARD

TO: ______________________________________

_______________________________________

_______________________________________

PROJECT TITLE: Lead Service Line Replacements

The City has considered the Bid submitted by you for the above described work in response to its Advertisements for Bids and Information for Bidders. You are hereby notified that your Bid in the amount $_________________________ has been accepted, provided you furnish the City with the required Certificates, Affidavits, Contractor's Performance and Payments Bonds and Certificate of Insurance within ten (10) days receipt of this notice to execute the Agreement. In case of failure to execute said Agreement and to furnish said bonds and documents as stipulated in the Bid Documents within ten (10) days from the date of receipt of this Notice, the City will be entitled to consider all your rights arising out of the City's acceptance of your Bid as abandoned and as a forfeiture of your bid bond. The City will also be entitled to such other rights as may be granted by law. You are required to return an acknowledged copy of the Notice of Award to the City.

Dated this the ______ day of _____________________, 20_____.

BY: _________________________________

Name: Daniel G. Raymondi

Title: Commissioner of Public Works

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by:

_______________________________________

(Company Name)

Signature: ____________________________ Date:________________________

Print Name: ___________________________ Title: _________________________
AGREEMENT

THIS AGREEMENT made as of the _____ day of ________ in the year 2017 by and between the City of Quincy, Massachusetts, acting through its Department of Public Works, hereinafter called the "City" and ________________________________ with legal address and principle place of business at ________________________________, hereinafter called the "Contractor". The City and the Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 WORK

1.1 Contractor shall perform the Work as specified or indicated in the Contract Documents for the Lead Service Line Replacements.

ARTICLE 2 ENGINEER

2.1 The project design and construction documents have been prepared by the Weston & Sampson Engineers, Inc., Five Centennial Drive, Peabody, MA 01960.

2.2 Weston & Sampson Engineers, Inc. in conjunction with the City of Quincy Engineering Department, 55 Sea Street, Quincy, Massachusetts will act as the Engineer in connection with execution of the project work, in accordance with the Contract Documents.

ARTICLE 3 CONTRACT TIME

3.1 The contract completion date shall be September 30, 2017, commencing ten (10) calendar days following the effective date of this Agreement. No site work shall be allowed between Thanksgiving and March 15, without permission, in writing, from the City.

3.2 The Contractor agrees that the Work shall be prosecuted regularly, diligently, and uninterrupted and at such rate of progress as will insure full completion thereof within the Contract Time stated above. It is expressly understood and agreed, by and between the contractor and the City, that the Contract Time is reasonable for the completion of the Work, taking into consideration the average climatic range and usual business/commercial and industrial activities prevailing in this locality.

ARTICLE 4 CONTRACT PRICE

4.1 The City will pay the contractor for performance of the Work in accordance with the Contract Documents, in current funds at the itemized unit or lump sum prices of work items, a total agreed sum of $__________________________ (state the total amount in words): as submitted in the Contractor's Bid Form attached to the Agreement.
ARTICLE 5 APPLICATIONS FOR PAYMENT

5.1 Applications for payment shall be submitted by the Contractor and processed by the Engineer in accordance with the Conditions of the Contract included in the Contract Documents.

ARTICLE 6 PROGRESS AND FINAL PAYMENTS

6.1 The City will make progress payments on account of the Contract Price on the basis of the Contractor's Application for Payment, as recommended by the Engineer, monthly during construction as provided below. All progress payments will be on the basis of the progress of the Work measured by the schedule of values provided for in the Conditions of the Contract.

6.2 The City will make progress and final payments as provided for in the Conditions of the Contract and in accordance with the applicable Massachusetts General Laws.

ARTICLE 7 LIQUIDATED DAMAGES

7.1 The City and the Contractor recognize that time is of the essence for this Agreement and that the City will suffer financial loss if the Work is not completed within the Contract Time specified in Article 3 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense and difficulties involved in providing, in a legal or arbitration proceeding, the actual loss suffered by the City if the Work is not completed on time. Accordingly, instead of requiring any such proof, the City and the Contractor agree that as liquidated damages or delay (but not as a penalty) the Contractor shall pay the City $1,000.00 per day for each calendar day of delay until the Work is complete.

7.2 Provided, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the Work is for reasons included in Article 12 of the General Conditions.

7.3 Provided further, that the Contractor shall furnish the City the required notification of such delays in accordance with the applicable Conditions of the Contract.

ARTICLE 8 ASSURANCE

8.1 The Contractor has familiarized himself with the nature and extent of the Contract Documents, Work, locality, and with all local conditions and Federal, State and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work.
8.2 The Contractor has studied carefully all reports of investigations and tests of sub-surface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which were relied upon by the Engineer in the preparation of the Drawings and Specifications and which have been identified in the Supplementary Conditions.

8.3 The Contractor has made or caused to be made examinations, investigations and tests and studies of such reports and related data in addition to those referred to in the above paragraph as he deems necessary for the performance of the work at the Contact Price within the Contact Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by him for such purposes.

8.4 The Contractor has correlated the results of all such observations, examinations, tests, reports and data with the terms and conditions of the Contract Documents.

8.5 The Contractor has given the Engineer written notice of any conflict, error or discrepancy that he has discovered in the Contract Documents and the written resolution thereof by the Engineer is acceptable to the Contractor.

8.6 The Contractor agrees that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.
IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed, by their duly authorized officials, this Agreement in seven (7) copies, each of which shall be deemed an original on the date first above written. The Party of the First Part agrees to pay to the Party of the Second Part, upon satisfactory completion and delivery of the aforementioned, the sum of:

Amount in Figures: $______________________________

Amount in Words: __________________________________

WITNESS: 

BY: ____________________________
Name: James Timmins
Title: City Solicitor

BY: ____________________________
Name: Daniel G. Raymondi
Title: Commissioner of Public Works

BY: ____________________________
Name: ____________________________
Title: ____________________________

OWNER: The City of Quincy

BY: ____________________________
Name: Thomas P. Koch
Title: Mayor

BY: ____________________________
Name: Kathryn R. Hobin
Title: Purchasing Agent

Contract No.:________________________

P.O. No.:________________________

CONTRACTOR:

BY: ____________________________
Name: ____________________________
Title: ____________________________
Address: ____________________________

Code: ____________________________

The undersigned in compliance with MGL, Chapter 44, Section 31C, certifies that an appropriation in the amount required for this contract is available.

BY: ____________________________
Name: Mark Cavanagh
Title: Director of Municipal Finance
INDEMNITY AGREEMENT

In consideration of the award of Contract No. ____________________________ by the City of Quincy, hereinafter referred to as INDEMNITEE, to the CONTRACTOR/BIDDER: ____________________________________________________________

hereinafter referred to as INDEMNITOR, and for other good and valuable consideration, said INDEMNITOR agrees to hold INDEMNITEE, City of Quincy, and its various department and employees harmless from any and all liability, loss or damage that INDEMNITEE may suffer as the result of claims, demands, costs, including attorneys fees, or judgement or other actions against it by reason of any and all work done by or on behalf of the INDEMNITOR in connection with the above-referenced contract.

INDEMNITOR,

___________________________________
By Duly Authorized Agent

Date: ______________________________

00521-1
A. CONTRACTOR'S CERTIFICATION

A Contractor will not be eligible for award of a contract unless he has submitted the following certification, which is deemed a part of the resulting contract.

__________________________________________ certifies that:

1. it tends to use the following listed construction trades in the work under the contract:

[Signature]

Contractor's Signature/Authorized Representative

2. will comply with the minority manpower ratio and specific affirmative action steps contained herein; and

3. will obtain from each of its subcontractors and submit to the contracting administrating agency prior to the award of any subcontract under this contract the subcontractor certification required by these bid conditions.

B. SUBCONTRACTOR'S CERTIFICATION

Prior to the award of any subcontract, regardless of tier, the prospective subcontractor must execute and submit to the Prime Contractor the following certification, which will be deemed a part of the resulting subcontract.

__________________________________________ certifies that:

1. it tends to use the following listed construction trades in work under the subcontract:

[Signature]

Subcontractor's Signature

In order to ensure that said subcontractor's certification becomes a part of all subcontracts under the general contract, no subcontract shall be executed until an authorized representative of the state/municipal agency (or agencies) administering this project has determined, in writing, that said certification has been incorporated in such subcontract, regardless of tier. Any subcontract executed without such written approval may be deemed invalid.
Dear Mr. Timmins:

Please be advised that I have reviewed the statement on internal accounting controls prepared by/for [name of company], in connection with the above captioned project. This statement is required under Massachusetts General Laws, Chapter 30, Section 39R. In our opinion, representations of management are consistent with our evaluation of the system of internal accounting controls. In addition, we believe that they are reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the firm's financial statements.

Yours sincerely,

______________________________
Certified Public Accountant

Note: This form is to be completed only when the contract exceeds $100,000. and is for the purchase of materials or for the construction, renovation, etc. of public works or public buildings.
CERTIFICATION

Internal Accounting

The Contractor certifies that it has internal accounting controls, as required by Chapter 30, Section 39R and that the Contractor will:

1. maintain accurate and detailed accounts for a six (6) year period after the final payment;
2. file regular statements of management concerning internal auditing controls;
3. file an annual audited financial statement; and
4. submit a statement from an independent certified public accountant that such CPA has examined management's internal auditing controls and expresses an opinion as to their consistency with management's statements in (2) above, and whether such statements are reasonable with respect to transactions and assets that are substantial in relation to designer's financial statements. General Laws, Chapter 7, Section 301 (e).

Signed under the pains and penalties of perjury:

__________________________________________
Name of Company

__________________________________________
Authorized Signature

Note: This form is to be completed only when the contract exceeds $100,000 and is for the purchase of materials or for the construction, renovation, etc. of public works or public buildings.
CERTIFICATE OF ACKNOWLEDGMENT OF CONTRACTOR
FOR AGREEMENT AND CONTRACT BONDS

State of _____________________________  }  Fed. Tax ID # _____________________________
County of ___________________________

On this _______ day of _______________________, 20____, before me personally
appeared ________________________________________________ , who
being by me duly sworn, did depose and say as follows:

That he is ________________________________ in the firm of
(position in the firm)
__________________________________________, that said firm consists
(name of firm)
of ____________________________________________
(name of principals in firm and positions)

__________________________________________
__________________________________________
__________________________________________

that he executed the foregoing instruments on behalf of said firm for the uses and purposes stated
herein. If a corporation, that the seal affixed to the foregoing instrument is such corporate seal and it
was so affixed by order of the Board of Directors of said corporation, and that by like order, he
signed thereto his name and official designation.

__________________________________________
Notary Public

Seal

My commission expires: __________________________
PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENT: That

__________________________________________
(Name of Contractor)

__________________________________________
(Address of Contractor)

(Name of Surety)

__________________________________________
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

__________________________________________
(The Department of Public Works for the City of Quincy, Massachusetts)

__________________________________________
(Name of Owner)

__________________________________________
(Address of Owner)

hereinafter called OWNER, in the penal sum of: $ __________________________

Dollars

in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these present.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner, dated the ___ day of _________ 20____, a copy of which is hereto attached and made a part hereof for the construction of:

Lead Service Line Replacements – Phase 1

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the City, with or without notice to the Surety and during the one year guarantee period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the City from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the City all outlay and expense which the City may incur in making good any default, then this obligation shall be void, otherwise to remain in full force and effect.
Provided further, that said surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

Provided further, that no final settlement between the owner and the contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

In witness whereof, this instrument is executed in seven (7) counterparts, one of which shall be deemed an original, this the ___ day of ______ 20__. 

Attest

__________________________                     ________________________
Principal's secretary                                   Principal

[SEAL]                                                  BY: ________________________

(Address)

__________________________
(Witness as to principal)

(Address)

__________________________
(Surety)

ATTEST:

__________________________
(Surety secretary)

[SEAL]                                                  BY: ________________________

(Witness to surety)                                     (Attorney-in-fact)

(Address)                                               (Address)

Note: Date of bond must not be prior to date of contract. If contractor is partnership, all partners should execute bond.

Important: Surety companies executing bonds must appear on the treasury department's most current list (circular 570 as amended) and be authorized to transact business in the state of projects' location.
PAYMENT BOND

KNOW ALL MEN BY THESE PRESENT: that

(Name of Contractor)

(Address of Contractor)
a (corporation, partnership, individual), hereinafter called Principal, and
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

The Department of Public Works for the City of Quincy, Massachusetts

(Name of Owner)

1305 Hancock Street Quincy, MA 02169

(Address of Owner)

hereinafter called OWNER, in the penal sum of: $ 

(Dollars)

in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these present.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner, dated the ___ day of ____________ 20___, a copy of which is hereto attached and made a part hereof for the construction of:

Lead Service Line Replacements – Phase 1

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void, otherwise to remain in full force and effect.
PROVIDED FURTHER, that said surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the WORK or to the SPECIFICATIONS.

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

IN WITNESS WHEREOF, this instrument is executed in seven (7) counterparts, one of which shall be deemed an original, this the ______ day of ____________________ 20__.

ATTEST

__________________________
Principal's Secretary

__________________________
Principal

BY __________________________

__________________________
(Address)

(Witness as to Principal)

__________________________
(Address)

__________________________
(Surety)

ATTEST:

__________________________
(Surety Secretary)

[SEAL]

__________________________
BY: __________________________

__________________________
(Witness to Surety) (Address)

__________________________
(Surety Secretary)

[SEAL]

__________________________
BY: __________________________

__________________________
(Witness to Surety) (Address)

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(Surety Secretary)

[SEAL]

__________________________
BY: __________________________

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(Witness to Surety) (Address)

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(Surety Secretary)

[SEAL]

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BY: __________________________

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(Witness to Surety) (Address)

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(Surety Secretary)

[SEAL]

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BY: __________________________

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(Witness to Surety) (Address)

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(Surety Secretary)

[SEAL]

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BY: __________________________

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(Witness to Surety) (Address)

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(Surety Secretary)

[SEAL]

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BY: __________________________

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(Surety Secretary)

[SEAL]

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BY: __________________________

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(Surety Secretary)

[SEAL]

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BY: __________________________

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(Surety Secretary)

[SEAL]

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(Surety Secretary)

[SEAL]

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(Surety Secretary)

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(Surety Secretary)

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(Surety Secretary)

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(Surety Secretary)

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(Surety Secretary)

[SEAL]

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BY: __________________________

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(Witness to Surety) (Address)

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(Surety Secretary)

[SEAL]

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BY: __________________________

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(Witness to Surety) (Address)

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(Surety Secretary)

[SEAL]

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(Surety Secretary)

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(Surety Secretary)

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(Surety Secretary)

[SEAL]

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BY: __________________________

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(Witness to Surety) (Address)

__________________________
(Surety Secretary)

[SEAL]

__________________________
BY: __________________________

__________________________
(Witness to Surety) (Address)
CERTIFICATE OF INSURANCE

This is to certify that the ___________________________ (Company) has issued the policies listed below, that these policies are written in accordance with the Company’s standard policies and endorsements, except as indicated below or as noted in the attachments herewith, which policies and endorsements will be made available to ENGINEER and OWNER UPON request, that they provide coverage and limits of liability shown with respect to the insurance indicated that they are in force on this date, that all deductible amounts are indicated below, and that this Certificate is furnish in accordance with and for the purpose of satisfying the requirements of OWNER and ENGINEER in connection with the award and performance of a contract or agreement between (OWNER), and

1. Name of Insured
2. Address of Insured
3. Location and Description of Work

Project Contract No.

Coverage and Limits of Liability

<table>
<thead>
<tr>
<th>Policy Date</th>
<th>Effective Date</th>
<th>Expiration Date</th>
<th>Each Occurrence</th>
<th>Each Aggregate</th>
<th>Number Occurrence Aggregate</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Owner’s Protective Liability has been issued at the expense of Above Insured to Owner.</td>
<td></td>
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<td>$1,000,000.</td>
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<tr>
<td>B. Comprehensive General Liability</td>
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<tr>
<td>Property Damage Insurance under policies A &amp; B above includes Coverage for Explosion, Collapse and Underground Property Damage</td>
<td></td>
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</tr>
<tr>
<td>C. Auto Liability</td>
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CONTRACTUAL LIABILITY

CONTRACTOR shall at all times indemnify and save harmless OWNER, ENGINEER and their respective officers, agents and employees on account of any and all claims, damages, losses, litigation, expenses, counsel fees and compensation arising out of injuries (including death) sustained by or alleged to have been sustained by the officers, agents and employees of said OWNER or ENGINEER or of CONTRACTOR, his subcontractors, or material men, and from injuries (including death sustained by or alleged to have been sustained by the public, any or all persons on or near the Work, or by any other person or property, real or personal (including property of said OWNER or ENGINEER caused in whole or in part by the acts, omissions, or neglect of CONTRACTOR including but not limited to any neglect in safeguarding the work or through the use of unacceptable materials in contracting the Work by CONTRACTOR, any subcontractor, material man, or anyone directly or indirectly employed by them or any of them while engaged in the performance of the Contract, including the entire elapsed time from the date ordered to start work or the actual start, whichever occurs first, until completion of the one year correction period, as certified by OWNER or ENGINEER.

Policies A, B, C & D shall remain in effect during the one year correction period.

Such insurer as is herein certified applies to all operations of the insured in connection with, and necessary and incidental to, the work herein described at the locations stated.

It is hereby understood and agreed that the above policies will not be restricted, suspended, materially changed, nor canceled without 30 days advance notice by registered mail to OWNER and ENGINEER.

Authorized Representative Signature

Address

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00545-1
TAX COMPLIANCE CERTIFICATE

MASS. GENERAL LAWS, CH. 62C, S: 49A(b)

I hereby certify that I have complied with all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors, and withholding of child support.

Signed under the pains and penalties of perjury.

(1) Individual Contractor

________________________________________

(Contractor’s Name and Signature)

Social Security Number

______________________________

(2) Corporation, Association or Partnership

________________________________________

(Contractor’s Name)

Federal Tax ID Number, or Social Security Number

______________________________

By: _________________________________________

(Authorized Signature)

Note to Contractor: Please sign at (1) or (2), whichever applies.
CHAPTER 62C. ADMINISTRATIVE PROVISIONS RELATIVE TO STATE TAXATION

Chapter 62C: Section 49A Certification of compliance with tax laws as prerequisite to obtaining license or governmental contract

Section 49A. (a) Any person applying to any department, board, commission, division, authority, district or other agency of the commonwealth or any subdivision of the commonwealth, including a city, town or district, for a right or license to conduct a profession, trade or business, or for the renewal of such right or license, shall certify upon such application, under penalties of perjury, that he has complied with all laws of the commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support. Such right or license shall not be issued or renewed unless such certification is made.

(b) No contract or other agreement for the purposes of providing goods, services or real estate space to any of the foregoing agencies shall be entered into, renewed or extended with any person unless such person certifies in writing, under penalties of perjury, that he had complied with all laws of the commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

(c) Any such agency, which has been notified by the commissioner pursuant to section forty-seven A that a person who holds a license or certificate of authority issued by such agency or who has agreed to furnish goods, services or real estate space to such agency has neglected or refused to file any returns or to pay any tax required under this chapter and that such person has not filed in good faith a pending application for abatement of such tax or a pending petition before the appellate tax board contesting such tax or has been penalized pursuant to section 9 of chapter 62E for failure to comply with the provisions under said chapter 62E relating to reporting of employees and contractors, or has been penalized pursuant to paragraph (3) of subsection (f) of section 12 of chapter 119A for failure to comply with the provisions under said chapter 119A relating to withholding and remitting child support, shall refuse to reissue, renew or extend such license, certificate of authority, contract or agreement until the agency receives a certificate issued by the commissioner that the person is in good standing with respect to any and all returns due and taxes payable to the commissioner as of the date of issuance of said certificate, including all returns and taxes referenced in the initial notification or, if the licensee has been penalized for failure to comply with the provisions relating to reporting of employees and contractors under chapter 62E or withholding and remitting child support under chapter 119A, a certificate issued by the commissioner that the licensee is in compliance with said provisions.

(d) Any person who owns or leases a motor vehicle or trailer that is required to be registered in the commonwealth under chapter 90 and improperly registers the motor vehicle or trailer in another state or misrepresents the place of garaging of the motor vehicle or trailer in another city or town, shall be considered in violation of laws of the commonwealth relating to taxes under chapter 60A, chapter 64H or chapter 64I. The right, license or contract provided for in subsections (a) and (b) shall not be issued or renewed until the person or business entity has paid all taxes due at the time of application for such right, license or contract.

(e) Any person who, for the purpose of evading payment of a tax pursuant to chapters 59 to 64J, inclusive, willfully makes and subscribes any return, form, statement or other document pursuant to subsection (a), (b) or (d) that contains or is verified by a written declaration that is made under the penalties of perjury, and that contains information that he does not believe to be true and correct as to every matter material to his compliance with all laws of the commonwealth relating to taxes, shall be subject to section 73.
NOTICE TO PROCEED

TO: ___________________________  DATE: ___________________________

_________________________________________  Project: ___________________________

You are hereby notified to commence WORK on or before ___________________________
In accordance with contract documents the date for completion of all work is September 30, 2017.

BY: ___________________________

Name: Daniel G. Raymondi

Title: Commissioner of Public Works

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by:

_________________________________________

(COMPANY NAME)

Signature: ___________________________  Date: ___________________________

Print Name: ___________________________  Title: ___________________________
CERTIFICATION OF GENERAL BIDDERS ON PUBLIC CONSTRUCTION PROJECTS

I. CERTIFICATION REGARDING HEALTH AND SAFETY

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

II. CERTIFICATION REGARDING NON-COLLUSION AND DEBARMENT

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.

Date: __________________

__________________________________________
Name of General Bidder

By _______________________________________
Signature

__________________________________________
Print name and title

__________________________________________
Business Address

__________________________________________
Street Address City and State
CERTIFICATION OF SUB-BIDDERS (IF ANY) ON PUBLIC CONSTRUCTION PROJECTS

I. CERTIFICATION REGARDING HEALTH AND SAFETY

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

II. CERTIFICATION REGARDING NON-COLLUSION AND DEBARMENT

The undersigned further certifies under penalties of perjury that this subbid is in all responses bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the “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.

Date ____________________

_________________________________________
Name of Sub-bidder

By ________________________________
Signature

________________________________________
Print Name and Title

________________________________________
Business Name

________________________________________
Street Address, City and State

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE

a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

___________________

AMERICAN CONSULTING ENGINEERS COUNCIL

___________________

AMERICAN SOCIETY OF CIVIL ENGINEERS

This document has been approved and endorsed by

The Associated General Contractors of America

Construction Specifications Institute

These General Conditions have been prepared for use with the Owner-Contractor Agreements (No. 1910-8-A-1 or 1910-8-A-2) (1996 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC User’s Guide (No. 1910-50). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. 1910-17) (1996 Edition).

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

A. Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

1. Addenda--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.

2. Agreement--The written instrument which is evidence of the agreement between OWNER and CONTRACTOR covering the Work.

3. Application for Payment--The form acceptable to ENGINEER which is to be used by CONTRACTOR during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. Asbestos--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. Bid--The offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. Bidding Documents--The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

7. Bidding Requirements--The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.

8. Bonds--Performance and payment bonds and other instruments of security.

9. Change Order--A document recommended by ENGINEER which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. Claim--A demand or assertion by OWNER or CONTRACTOR seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. Contract--The entire and integrated written agreement between the OWNER and CONTRACTOR concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

* 12. Contract Documents--The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR’s Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER’s written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

13. Contract Price--The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.03 in the case of Unit Price Work).

14. Contract Times--The number of days or the dates stated in the Agreement to: (i) achieve Substantial Completion; and (ii) complete the Work so that it is ready for final payment as evidenced by ENGINEER’s written recommendation of final payment.

15. CONTRACTOR--The individual or entity with whom OWNER has entered into the Agreement.


17. Drawings--That part of the Contract Documents prepared or approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by CONTRACTOR. Shop Drawings and other CONTRACTOR submittals are not Drawings as so defined.

18. Effective Date of the Agreement--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which
the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. **ENGINEER**--The individual or entity named as such in the Agreement.

20. **ENGINEER's Consultant**--An individual or entity having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

21. **Field Order**--A written order issued by ENGINEER which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

22. **General Requirements**--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

23. **Hazardous Environmental Condition**--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

24. **Hazardous Waste**--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

25. **Laws and Regulations; Laws or Regulations**--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. **Liens**--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

27. **Milestone**--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

28. **Notice of Award**--The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement.

29. **Notice to Proceed**--A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform the Work under the Contract Documents.

30. **OWNER**--The individual, entity, public body, or authority with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

31. **Partial Utilization**--Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

32. **PCBs**--Polychlorinated biphenyls.

33. **Petroleum**--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

34. **Project**--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.

35. **Project Manual**--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

36. **Radioactive Material**--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

37. **Resident Project Representative**--The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.

38. **Samples**--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. **Shop Drawings**--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

40. **Site**--Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by OWNER which are designated for the use of CONTRACTOR.

41. **Specifications**--That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

42. **Subcontractor**--An individual or entity having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.

* See Supplementary Conditions 00700 - 7

** See Supplementary Conditions 17.08
** 43. Substantial Completion--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.

44. Supplementary Conditions--That part of the Contract Documents which amends or supplements these General Conditions.

45. Supplier--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

46. Underground Facilities--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

47. Unit Price Work--Work to be paid for on the basis of unit prices.

48. Work--The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

49. Work Change Directive--A written statement to CONTRACTOR issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

50. Written Amendment--A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

* See Supplementary Conditions

** 1.02 Terminology

A. Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms “as allowed,” “as approved,” or terms of like effect or import are used, or the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of ENGINEER as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.

B. Day

1. The word “day” shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

C. Defective

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.04 or 14.05).

D. Furnish, Install, Perform, Provide

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or
equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, “provide” is implied.

E. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 Delivery of Bonds

A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

2.02 Copies of Documents

A. OWNER shall furnish to CONTRACTOR up to ten copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

2.03 Commencement of Contract Times; Notice to Proceed *

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 Starting the Work

A. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 Before Starting Construction

A. CONTRACTOR’s Review of Contract Documents: Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.

B. Preliminary Schedules: Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:

1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and

3. a preliminary schedule of values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

C. Evidence of Insurance: Before any Work at the Site is started, CONTRACTOR and OWNER shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with Article 5.

2.06 Preconstruction Conference

A. Within 20 days after the Contract Times start to run, but before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 Initial Acceptance of Schedules

A. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an additional

* See Supplementary Conditions 00700 - 9 ** See Supplementary Conditions 17.08
ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

1. The progress schedule will be acceptable to ENGINEER if it provides an orderly progression of the Work to completion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR’s full responsibility therefor.

2. CONTRACTOR’s schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.

3. CONTRACTOR’s schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 Intent

A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to OWNER.

C. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in Article 9.

3.02 Reference Standards

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER’s Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 Reporting and Resolving Discrepancies

A. Reporting Discrepancies

1. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).
3.04 Amending and Supplementing Contract Documents

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER’s approval of a Shop Drawing or Sample; or (iii) ENGINEER’s written interpretation or clarification.

3.05 Reuse of Documents

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER’s Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaption by ENGINEER. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

4.01 Availability of Lands

A. OWNER shall furnish the Site. OWNER shall notify CONTRACTOR of any encumbrances or restrictions not of general application but specifically related to use of the Site with which CONTRACTOR must comply in performing the Work. OWNER will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If CONTRACTOR and OWNER are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in OWNER’s furnishing the Site, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

B. Upon reasonable written request, OWNER shall furnish CONTRACTOR with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and OWNER’s interest therein as necessary for giving notice of or filing a mechanic’s or construction lien against such lands in accordance with applicable Laws and Regulations.

C. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 Subsurface and Physical Conditions

* A. Reports and Drawings: The Supplementary Conditions identify:

   1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Contract Documents; and

   2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Contract Documents.

B. Limited Reliance by CONTRACTOR on Technical Data Authorized: CONTRACTOR may rely upon the general accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data,” CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER, or any of ENGINEER’s Consultants with respect to:

   1. the completeness of such reports and drawings for CONTRACTOR’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto; or

   2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

   3. any CONTRACTOR interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions, or information.

4.03 Differing Subsurface or Physical Conditions

A. Notice: If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

   1. is of such a nature as to establish that any “technical data” on which CONTRACTOR is entitled to rely as provided in paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

**

B. ENGINEER’s Review: After receipt of written notice as required by paragraph 4.03.A, ENGINEER will promptly review the pertinent condition, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto, and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER’s findings and conclusions.

C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in CONTRACTOR’s cost of, or time required for, performance of the Work; subject, however, to the following:

   a. such condition must meet any one or more of the categories described in paragraph 4.03.A; and
   
   b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.08 and 11.03.

2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if:

   a. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
   
   b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or
   
   c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.

3. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in paragraph 10.05. However, OWNER, ENGINEER, and ENGINEER’s Consultants shall not be liable to CONTRACTOR for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.04 Underground Facilities

A. Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities, including OWNER, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:

   a. reviewing and checking all such information and data,
   
   b. locating all Underground Facilities shown or indicated in the Contract Documents,
   
   c. coordination of the Work with the owners of such Underground Facilities, including OWNER, during construction, and
   
   d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. Not Shown or Indicated

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with
reasonable accuracy in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.

2. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, OWNER or CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

4.05 Reference Points

A. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER’s judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.*

4.06 Hazardous Environmental Condition at Site

A. Reports and Drawings: Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the ENGINEER in the preparation of the Contract Documents.*

B. Limited Reliance by CONTRACTOR on Technical Data Authorized: CONTRACTOR may rely upon the general accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data,” CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER’s Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any CONTRACTOR interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions or information.

C. CONTRACTOR shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. CONTRACTOR shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible.

D. If CONTRACTOR encounters a Hazardous Environmental Condition or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous Environmental Condition, CONTRACTOR shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by paragraph 6.16); and (iii) notify OWNER and ENGINEER (and promptly thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. CONTRACTOR shall not be required to resume Work in connection with such condition or in any affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the
amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by CONTRACTOR, either party may make a Claim therefor as provided in paragraph 10.05.

F. If after receipt of such written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 10.05. OWNER may have such deleted portion of the Work performed by OWNER’s own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER’s Consultants and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.E shall obligate OWNER to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

H. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER’s Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.F shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

I. The provisions of paragraphs 4.02, 4.03, and 4.04 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 Performance, Payment, and Other Bonds

A. CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR’s obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Contract Documents. *

B. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All Bonds signed by an agent must be accompanied by a certified copy of such agent’s authority to act.

C. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.01.B, CONTRACTOR shall within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02.

5.02 Licensed Sureties and Insurers

A. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 Certificates of Insurance

A. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain.
5.04 CONTRACTOR’s Liability Insurance

* A. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR’s performance of the Work and CONTRACTOR’s other obligations under the Contract Documents, whether it is to be performed by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers’ compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR’s employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR’s employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this paragraph 5.04 to be purchased and maintained shall:

* 1. with respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER’s Consultants, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering CONTRACTOR’s indemnity obligations under paragraphs 6.07, 6.11, and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing, or replacing defective Work in accordance with paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).*

5.05 OWNER’s Liability Insurance

* A. In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.04, OWNER, at OWNER’s option, may purchase and maintain at OWNER’s expense OWNER’s own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

5.06 Property Insurance

* A. Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER’s Consultants, and any other
individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an additional insured;

2. be written on a Builder’s Risk “all-risk” or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER;

5. allow for partial utilization of the Work by OWNER;

6. include testing and startup, and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER’s Consultants, and any other individuals or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.07.

D. OWNER shall not be responsible for purchasing and maintaining any property insurance specified in this paragraph 5.06 to protect the interests of CONTRACTOR, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by CONTRACTOR, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser’s own expense.

E. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraph 5.06, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the Site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

5.07 Waiver of Rights

A. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER’s Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER’s Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.
B. OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER’s Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to OWNER’s property or the Work caused by, arising out of, or resulting from fire or other peril whether or not insured by OWNER; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.05, after Substantial Completion pursuant to paragraph 14.04, or after final payment pursuant to paragraph 14.07.

C. Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against CONTRACTOR, Subcontractors, ENGINEER, or ENGINEER’s Consultants and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them.

5.08 Receipt and Application of Insurance Proceeds

* A. Any insured loss under the policies of insurance required by paragraph 5.06 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.08.B. OWNER shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

B. OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to OWNER’s exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

5.09 Acceptance of Bonds and Insurance; Option to Replace

* A. If either OWNER or CONTRACTOR has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by paragraph 2.05.C. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party’s interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 Partial Utilization, Acknowledgment of Property Insurer

A. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR’S RESPONSIBILITIES

6.01 Supervision and Superintendence

A. CONTRACTOR shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

* See Supplementary Conditions 17.08
A. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.07) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.02 Labor; Working Hours

A. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out, and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER’s written consent (which will not be unreasonably withheld) given after prior written notice to ENGINEER.

6.03 Services, Materials, and Equipment

A. Unless otherwise specified in the General Requirements, CONTRACTOR shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 Progress Schedule

A. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.07 as it may be adjusted from time to time as provided below.

1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in
a. If in ENGINEER’s sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an “or-equal” item under paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

c. The procedure for review by ENGINEER will be as set forth in paragraph 6.05.A.2.d, as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.

d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR’s achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

B. Substitute Construction Methods or Procedures:
If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER’s sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.05.A.2.

C. Engineer’s Evaluation: ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.05.A and 6.05.B. ENGINEER will be the sole judge of acceptability. No “or-equal” or substitute will be ordered, installed or utilized until ENGINEER’s review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an “or equal.” ENGINEER will advise CONTRACTOR in writing of any negative determination.

D. Special Guarantee: OWNER may require CONTRACTOR to furnish at CONTRACTOR’s expense a special performance guarantee or other surety with respect to any substitute.

E. ENGINEER’s Cost Reimbursement: ENGINEER will record time required by ENGINEER and ENGINEER’s Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER’s Consultants for evaluating each such proposed substitute.

F. CONTRACTOR’s Expense: CONTRACTOR shall provide all data in support of any proposed substitute or “or-equal” at CONTRACTOR’s expense.

6.06 Concerning Subcontractors, Suppliers, and Others

A. CONTRACTOR shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to OWNER as indicated in paragraph 6.06.B), whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to OWNER in advance for acceptance by OWNER by a specified date prior to the Effective Date of the Agreement, and if CONTRACTOR has submitted a list thereof in accordance
with the Supplementary Conditions, OWNER’s acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

C. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as CONTRACTOR is responsible for CONTRACTOR’s own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR.

E. CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.

** F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.06, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER’s Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

6.07 Patent Fees and Royalties

A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER’s Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 Permits

** A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto, such as plant investment fees.

6.09 Laws and Regulations

A. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations,
neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR’s compliance with any Laws or Regulations.

B. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be CONTRACTOR’s primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR’s obligations under paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in paragraph 10.05.

** 6.10 Taxes

A. CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

** 6.11 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas

1. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER’s Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR’s performance of the Work.

B. Removal of Debris During Performance of the Work: During the progress of the Work CONTRACTOR shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. Cleaning: Prior to Substantial Completion of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. Loading Structures: CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 Record Documents

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER.

6.13 Safety and Protection

A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER’s Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). CONTRACTOR’s duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 Safety Representative

A. CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 Hazard Communication Programs

A. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 Emergencies

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 Shop Drawings and Samples

A. CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show ENGINEER the services, materials, and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.17.E.

B. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. Each Sample will be identified as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.E. The numbers of each Sample to be submitted will be as specified in the Specifications.

C. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required by paragraph 2.07, any related Work performed prior to ENGINEER’s review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

D. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

   a. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
b. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and

d. CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR’s obligations under the Contract Documents with respect to CONTRACTOR’s review and approval of that submittal.

3. At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

E. ENGINEER’s Review

* 1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER’s review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. ENGINEER’s review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. ENGINEER’s review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER’s attention to each such variation at the time of each submittal as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

F. Resubmittal Procedures

1. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.18 Continuing the Work

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.04 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.19 CONTRACTOR’s General Warranty and Guarantee

A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER’s Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR’s warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or

2. normal wear and tear under normal usage.

B. CONTRACTOR’s obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR’s obligation to perform the Work in accordance with the Contract Documents:

1. observations by ENGINEER;
2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;

4. use or occupancy of the Work or any part thereof by OWNER;

5. any acceptance by OWNER or any failure to do so;

6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;

7. any inspection, test, or approval by others;

8. any correction of defective Work by OWNER.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER’s Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom; and

2. is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier, or other individual or entity under workers’ compensation acts, disability benefit acts, or other employee benefit acts.

* C. The indemnification obligations of CONTRACTOR under paragraph 6.20.A shall not extend to the liability of ENGINEER and ENGINEER’s Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

ARTICLE 7 - OTHER WORK

7.01 Related Work at Site

A. OWNER may perform other work related to the Project at the Site by OWNER’s employees, or let other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to CONTRACTOR prior to starting any such other work; and

2. if OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in paragraph 10.05.

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the other work with OWNER’s employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under
this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

C. If the proper execution or results of any part of CONTRACTOR’s Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR’s Work. CONTRACTOR’s failure to so report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR’s Work except for latent defects and deficiencies in such other work.

7.02 Coordination

A. If OWNER intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
2. the specific matters to be covered by such authority and responsibility will be itemized; and
3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility for such coordination.

ARTICLE 8 - OWNER’S RESPONSIBILITIES

8.01 Communications to Contractor

A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.02 Replacement of ENGINEER

A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer to whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.03 Furnish Data

A. OWNER shall promptly furnish the data required of OWNER under the Contract Documents.

8.04 Pay Promptly When Due

A. OWNER shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.02.C and 14.07.C.

8.05 Lands and Easements; Reports and Tests

A. OWNER’s duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER’s identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.

8.06 Insurance

* OWNER’s responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 Change Orders

A. OWNER is obligated to execute Change Orders as indicated in paragraph 10.03.

8.08 Inspections, Tests, and Approvals

A. OWNER’s responsibility in respect to certain inspections, tests, and approvals is set forth in paragraph 13.03.B.

8.09 Limitations on OWNER’s Responsibilities

A. The OWNER shall not supervise, direct, or have control or authority over, nor be responsible for, CONTRACTOR’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. OWNER will not be responsible for CONTRACTOR’s failure to perform the Work in accordance with the Contract Documents.

8.10 Undisclosed Hazardous Environmental Condition

A. OWNER’s responsibility in respect to an undiscovered Hazardous Environmental Condition is set forth in paragraph 4.06.

8.11 Evidence of Financial Arrangements

A. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER’s obligations under the Contract Documents, OWNER’s
responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER’S STATUS DURING CONSTRUCTION

9.01 OWNER’S Representative

A. ENGINEER will be OWNER’s representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER’s representative during construction are set forth in the Contract Documents and will not be changed without written consent of OWNER and ENGINEER.

9.02 Visits to Site

A. ENGINEER will make visits to the Site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR’s executed Work. Based on information obtained during such visits and observations, ENGINEER, for the benefit of OWNER, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. ENGINEER’s efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work.

B. ENGINEER’s visits and observations are subject to all the limitations on ENGINEER’s authority and responsibility set forth in paragraph 9.10, and particularly, but without limitation, during or as a result of ENGINEER’s visits or observations of CONTRACTOR’s Work ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

9.03 Project Representative

A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the Site who is not ENGINEER’s Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 Clarifications and Interpretations

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

** See Supplementary Conditions 17.08

9.05 Authorized Variations in Work

A. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR, who shall perform the Work involved promptly. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefor as provided in paragraph 10.05.

9.06 Rejecting Defective Work

A. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.07 Shop Drawings, Change Orders and Payments

A. In connection with ENGINEER’s authority as to Shop Drawings and Samples, see paragraph 6.17.

B. In connection with ENGINEER’s authority as to Change Orders, see Articles 10, 11, and 12.

C. In connection with ENGINEER’s authority as to Applications for Payment, see Article 14.

9.08 Determinations for Unit Price Work

* See Supplementary Conditions

** See Supplementary Conditions 17.08
A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER’s preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER’s written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.05.

9.09 Decisions on Requirements of Contract Documents and Acceptability of Work

A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing, in accordance with the provisions of paragraph 10.05, with a request for a formal decision.

B. When functioning as interpreter and judge under this paragraph 9.09, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.07) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

9.10 Limitations on ENGINEER’s Authority and Responsibilities

A. Neither ENGINEER’s authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. ENGINEER will not be responsible for CONTRACTOR’s failure to perform the Work in accordance with the Contract Documents.

C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. ENGINEER’s review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this paragraph 9.10 shall also apply to ENGINEER’s Consultants, Resident Project Representative, and assistants.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 Authorized Changes in the Work

A. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in paragraph 10.05.

10.02 Unauthorized Changes in the Work

A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in paragraph 3.04, except in the case of an emergency as provided in paragraph 6.16 or in the case of uncovering Work as provided in paragraph 13.04.B.

10.03 Execution of Change Orders

A. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

* See Supplementary Conditions

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** See Supplementary Conditions 17.08
1. changes in the Work which are: (i) ordered by OWNER pursuant to paragraph 10.01.A, (ii) required because of acceptance of defective Work under paragraph 13.08.A or OWNER’s correction of defective Work under paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.A.

10.04 Notification to Surety

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR’s responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

10.05 Claims and Disputes

A. Notice: Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the other party to the Contract within 60 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. Each Claim shall be accompanied by claimant’s written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant’s last submittal (unless ENGINEER allows additional time).

B. ENGINEER’s Decision: ENGINEER will render a formal decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER’s written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:

1. an appeal from ENGINEER’s decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16; or

2. if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER’s written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision or within 60 days after Substantial Completion, whichever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

C. If ENGINEER does not render a formal decision in writing within the time stated in paragraph 10.05.B, a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.
D. No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.05.

ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

** 11.01 Cost of the Work

A. Costs Included: The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project. shall include only the following items, and shall not include any of the costs itemized in paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers’ compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers’ field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTR- 

TRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor’s Cost of the Work and fee shall be determined in the same manner as CONTRACTOR’s Cost of the Work and fee as provided in this paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

   a. The proportion of necessary transportation, travel, and subsistence expenses of CONTRACTOR’s employees incurred in discharge of duties connected with the Work.

   b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of CONTRACTOR.

   c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

   d. Sales, consumer use, and other similar taxes related to the Work and for which CONTRACTOR is liable, imposed by Laws and Regulations.

   e. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

   f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the perfor-
mance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR’s fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work.

i. When the Cost of the Work is used to determine the value of a Change Order or of a Claim, the cost of premiums for additional Bonds and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.

j. When all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

B. Costs Excluded: The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of CONTRACTOR’s officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR’s principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.01.A.1 or specifically covered by paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the CONTRACTOR’s fee.

2. Expenses of CONTRACTOR’s principal and branch offices other than CONTRACTOR’s office at the Site.

3. Any part of CONTRACTOR’s capital expenses, including interest on CONTRACTOR’s capital employed for the Work and charges against CONTRACTOR for delinquent payments.

4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraphs 11.01.A and 11.01.B.

C. CONTRACTOR’s Fee: When all the Work is performed on the basis of cost-plus, CONTRACTOR’s fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR’s fee shall be determined as set forth in paragraph 12.01.C.

D. Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to paragraphs 11.01.A and 11.01.B, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.02 Cash Allowances

A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. CONTRACTOR’s costs for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

B. Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price
Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER subject to the provisions of paragraph 9.08.

B. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR’s overhead and profit for each separately identified item.

C. OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Price in accordance with paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 Change of Contract Price

A. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in paragraph 11.01) plus a CONTRACTOR’s fee for overhead and profit (determined as provided in paragraph 12.01.C).

C. CONTRACTOR’s Fee. The CONTRACTOR’s fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

   a. for costs incurred under paragraphs 11.01.A.1 and 11.01.A.2, the CONTRACTOR’s fee shall be 15 percent;

   b. for costs incurred under paragraph 11.01.A.3, the CONTRACTOR’s fee shall be five percent;

   e. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

   d. no fee shall be payable on the basis of costs itemized under paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

   e. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR’s fee by an amount equal to five percent of such net decrease; and

   f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR’s fee shall be computed on the basis of the net change in accordance with paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.
12.02 Change of Contract Times

A. The Contract Times (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or Milestones) shall be based on written notice submitted by the party making the claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. Any adjustment of the Contract Times (or Milestones) covered by a Change Order or of any Claim for an adjustment in the Contract Times (or Milestones) will be determined in accordance with the provisions of this Article 12.

12.03 Delays Beyond CONTRACTOR’s Control

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in paragraph 12.02.A. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

12.04 Delays Within CONTRACTOR’s Control

A. The Contract Times (or Milestones) will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.05 Delays Beyond OWNER’s and CONTRACTOR’s Control

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR’s sole and exclusive remedy for such delay.

12.06 Delay Damages

A. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

1. delays caused by or within the control of CONTRACTOR; or

2. delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

B. Nothing in this paragraph 12.06 bars a change in Contract Price pursuant to this Article 12 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 Notice of Defects

A. Prompt notice of all defective Work of which OWNER or ENGINEER has actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 Access to Work

A. OWNER, ENGINEER, ENGINEER’s Consultants, other representatives and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR’s Site safety procedures and programs so that they may comply therewith as applicable.

13.03 Tests and Inspections

A. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.04.B shall be paid as provided in said paragraph 13.04.B; and

3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other
representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection or approval.

D. CONTRACTOR shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for OWNER’s and ENGINEER’s acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR’s purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to OWNER and ENGINEER.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

F. Uncovering Work as provided in paragraph 13.03E shall be at CONTRACTOR’s expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR’s intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.04 Uncovering Work

A. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER’s observation and replaced at CONTRACTOR’s expense.

B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER’s request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damage to the land or area made available for CONTRACTOR’s use by OWNER or permitted by Laws and Regulations as contemplated in paragraph 6.11A is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER’s written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all

13.05 OWNER May Stop the Work

A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 Correction or Removal of Defective Work

A. CONTRACTOR shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by ENGINEER, remove it from the Project and replace it with Work that is not defective. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.07 Correction Period

* See Supplementary Conditions
A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06.A, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

B. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work and suspend CONTRACTOR’s services related thereto, take possession of CONTRACTOR’s tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER’s representatives, agents and employees, OWNER’s other contractors, and ENGINEER and ENGINEER’s Consultants access to the Site to enable OWNER to exercise the rights and remedies under this paragraph.

C. All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by OWNER in exercising the rights and remedies under this paragraph 13.09 will be charged against CONTRACTOR pursuant to this sentence. If any such acceptance occurs prior to ENGINEER’s recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefor as provided in paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR’s defective Work.

D. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER’s rights and remedies under this paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 Schedule of Values

A. The schedule of values established as provided in paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 Progress Payments

A. Applications for Payments

1. At least 20 days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering
the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect OWNER’s interest therein, all of which must be satisfactory to OWNER.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied on account to discharge CONTRACTOR’s legitimate obligations associated with prior Applications for Payment.

* 3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. Review of Applications

** 1. ENGINEER will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER or return the Application to CONTRACTOR indicating in writing ENGINEER’s reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

2. ENGINEER’s recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER’s observations on the Site of the executed Work as an experienced and qualified design professional and on ENGINEER’s review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER’s knowledge, information and belief:

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.08, and to any other qualifications stated in the recommendation); and

   c. the conditions precedent to CONTRACTOR’s being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER’s responsibility to observe the Work.

3. By recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

4. Neither ENGINEER’s review of CONTRACTOR’s Work for the purposes of recommending payments nor ENGINEER’s recommendation of any payment, including final payment, will impose responsibility on ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR’s failure to comply with Laws and Regulations applicable to CONTRACTOR’s performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to OWNER free and clear of any Liens.

5. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER’s opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.02.B.2. ENGINEER may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in ENGINEER’s opinion to protect OWNER from loss because:

   a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

   b. the Contract Price has been reduced by Written Amendment or Change Orders;
c. OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.09; or

d. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.A.

C. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to OWNER with ENGINEER’s recommendation, the amount recommended will (subject to the provisions of paragraph 14.02.D) become due, and when due will be paid by OWNER to CONTRACTOR.

D. Reduction in Payment

1. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

   a. claims have been made against OWNER on account of CONTRACTOR’s performance or furnishing of the Work;

   b. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;

   c. there are other items entitled to a set-off against the amount recommended; or

   d. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.02.B.5.a through 14.02.B.5.c or paragraph 15.02.A.

2. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld. OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER’s satisfaction the reasons for such action.

3. If it is subsequently determined that OWNER’s refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.02.C.1.

14.03 CONTRACTOR’s Warranty of Title

A. CONTRACTOR warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

14.04 Substantial Completion

A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Promptly thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER’s objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing giving the reasons therefor. If, after consideration of OWNER’s objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER’s issuing the definitive certificate of Substantial Completion, ENGINEER’s aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

B. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.
A. Use by OWNER at OWNER’s option of any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR’s performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following conditions.

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

2. No occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of paragraph 5.10 regarding property insurance.

14.06 Final Inspection

A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 Final Payment

A. Application for Payment

1. After CONTRACTOR has, in the opinion of ENGINEER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in paragraph 6.12), and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.04.B.7; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in paragraph 14.07.A.2 and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

B. Review of Application and Acceptance

** 1. If, on the basis of ENGINEER’s observation of the Work during construction and final inspection, and ENGINEER’s review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR’s other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER’s recommendation of payment and present the Application for Payment to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.04. Otherwise,
C. Payment Becomes Due

1. Thirty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.

14.08 Final Completion Delayed

A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR’s final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 Waiver of Claims

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR’s continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing which are still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 OWNER May Suspend Work

** At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes a Claim therefor as provided in paragraph 10.05.

15.02 OWNER May Terminate for Cause

A. The occurrence of any one or more of the following events will justify termination for cause:

1. CONTRACTOR’s persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.07 as adjusted from time to time pursuant to paragraph 6.04);

2. CONTRACTOR’s disregard of Laws or Regulations of any public body having jurisdiction;

3. CONTRACTOR’s disregard of the authority of ENGINEER; or

4. CONTRACTOR’s violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in paragraph 15.02.A occur, OWNER may, after giving CONTRACTOR (and the surety, if any) seven days written notice, terminate the services of CONTRACTOR, exclude CONTRACTOR from the Site, and take possession of the Work and of all CONTRACTOR’s tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by OWNER arising out of or relating to completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and, when so approved by ENGINEER, incorporated in a Change Order. When exercising any rights or remedies

* See Supplementary Conditions 00700 - 38

** See Supplementary Conditions 17.08
under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

C. Where CONTRACTOR’s services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.03 OWNER May Terminate For Convenience

A. Upon seven days written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. for all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. for reasonable expenses directly attributable to termination.

B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 CONTRACTOR May Stop Work or Terminate

A. If, through no act or fault of CONTRACTOR, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, or OWNER fails for 30 days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in paragraph 15.03. In lieu of terminating the Contract and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within 30 days after it is submitted, or OWNER has failed for 30 days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may, seven days after written notice to OWNER and ENGINEER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.04 are not intended to preclude CONTRACTOR from making a Claim under paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR’s stopping the Work as permitted by this paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 Methods and Procedures

A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of paragraphs 9.09 and 10.05, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

ARTICLE 17 - MISCELLANEOUS

17.01 Giving Notice

A. Whenever any provision of the Contract Documents requires the giving of written notice, it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 Computation of Times

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 Cumulative Remedies

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 Survival of Obligations

* See Supplementary Conditions 00700 - 39 ** See Supplementary Conditions 17.08
A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Agreement.

17.05 Controlling Law

A. This Contract is to be governed by the law of the state in which the Project is located.
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SUPPLEMENTARY CONDITIONS

AMENDMENTS TO GENERAL CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. 1910-8, 1996 edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

ARTICLE 1. DEFINITIONS AND TERMINOLOGY

Add the following language at the beginning of definition 1.01 A.12 entitled "Contract Documents" in the General Conditions:

"The Advertisement for Bids, Instructions to Bidders, State Regulations, ..."

Delete the words "The individual or entity named as such in the Agreement" in 1.01.A.19, “Engineer”, and insert the following in their place:

"The individual or entity duly appointed by the Owner to undertake the duties and powers herein assigned to the Engineer, acting either directly or through duly appointed representatives."

Delete the words "and who is identified as such in the Supplementary Conditions" at the end of definition 1.01 A.20, entitled "ENGINEER'S Consultant."

Delete definition 1.01 A.41 entitled "Specifications" in the General Conditions in its entirety and insert the following in its place:

"Sections included under Division 1 through Division 15 of the Contract Documents."

ARTICLE 2. PRELIMINARY MATTERS

SC-2.02

Delete paragraph 2.02A of the General Conditions in its entirety and insert the following in its place:

“A. OWNER shall furnish to CONTRACTOR one (1) paper copy of the Contract Documents.”

SC-2.03

Add paragraph 2.03B:

Notwithstanding the time limitations provided in paragraph 2.03A, the OWNER may desire to commence the Contract Times later than the sixtieth day after the bid opening. The OWNER and CONTRACTOR, upon mutual agreement, may extend the commencement of the Contract Times to
any date that they elect. OWNER must obtain CONTRACTOR’s approval for extending the time beyond the dates/times stated in the Contract Documents.

SC-2.05

Delete paragraph 2.05C of the General Conditions in its entirety and insert the following in its place:

“C. Evidence of Insurance: CONTRACTOR shall deliver to OWNER, with a copy to the ENGINEER, Certificates of Insurance within 10 days after receipt of the notice of the acceptance of bid (and other evidence requested by OWNER) which CONTRACTOR is required to purchase and maintain in accordance with the requirements of Article 5.”

ARTICLE 3. CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

SC-3.01

Add the following sentence at the end of Paragraph 3.01A of the General Conditions:

"...by all. Each and every provision of law and clause required by law to be inserted in these Contract Documents shall be deemed to be inserted herein, and they shall be read and enforced as though it were included herein, and if through mistake or otherwise, any such provision is not inserted, or if not correctly inserted, then upon the application of either party, the Contract Documents shall forthwith be physically amended to make such insertion."

ARTICLE 4. AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

SC-4.02

Delete the term “Supplementary Conditions” of paragraph 4.02 A of the General Conditions and replace it with “Contract Documents”.

SC-4.04

Change “of” to “or” on line 6 of paragraph 4.04 B.2 of the General Conditions.

Delete the following words from lines 8 and 9 of paragraph 4.04 B.2 of the General Conditions:

“...or not shown or indicated with reasonable accuracy...”

SC-4.05

Add a new paragraph immediately after paragraph 4.05A of the General Conditions which is to read as follows:

"B. ENGINEER may check the lines, elevations and reference marks set by CONTRACTOR, and CONTRACTOR shall correct any errors disclosed by such check. Such a check shall
not be considered as approval of CONTRACTOR's work and shall not relieve CONTRACTOR of the responsibility for construction of the entire Work in accordance with the Contract Documents. CONTRACTOR shall furnish personnel to assist ENGINEER in checking lines and grades."

ARTICLE 5. BONDS AND INSURANCE

NOTICE TO CONTRACTOR:

1. Proof of Insurance coverage shall be furnished to the OWNER in accordance with the schedule for submittal of Bonds and Agreements.

2. Additionally refer to Article 2. PRELIMINARY MATTERS, Paragraph SC-2.05.C

SC-5.01

Insert these sentences following SC-5.01.A: The Surety Company providing the bonds shall have a rating of A or better within the Best Key Rating Guide and be licensed by the Massachusetts Division of Insurance. The CONTRACTOR shall pay the premiums for such Bonds.

SC-5.03

Delete the second sentence in paragraph 5.03A of the General Conditions, which begins "OWNER shall deliver to...."

SC-5.04

The limits of liability for the insurance required by paragraph 5.04A of the General Conditions shall provide coverage for not less than the following amounts or greater where required by law:

5.04 A.1 and 5.04 A.2 Workers' Compensation.

(1) Worker's Compensation per  
Statutory Requirements

(2) Coverage B - Employer's Liability  
$100,000/$500,000/$100,000

5.04 A.3, 5.04 A.4 and 5.04 A.5 Commercial General Liability Limits shall include coverage for Independent Contractors (also known as Owners and Contractors Protective Liability), explosion, collapse and underground hazard coverage (XCU), broad form property damage, blanket contractual liability and products/completed operations. The general aggregate limits shall be endorsed so that they respond on a per project and per location basis.

Limits:

$1,000,000 each occurrence

$2,000,000 general aggregate
$2,000,000 products/completed operations aggregate

5.04 A.6 Automobile Liability for owned, hired and non-owned vehicles:

(1) Bodily injury: $1,000,000 Combined single limit
(2) Property damage: $1,000,000 Combined single limit

Revise the beginning of paragraph 5.04.B.1 to read as follows:

“with respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.5 inclusive and paragraph 5.04.C, include as additional insureds…”

Delete paragraph 5.04.B.5 in its entirety and insert the following in its place:

“5. contains a provision that notice of cancellation of insurance be delivered in accordance with policy provisions. In addition, the CONTRACTOR and/or its insurance broker/agent shall immediately notify the OWNER and ENGINEER should any insurance coverage be cancelled. The CONTRACTOR shall immediately stop work on the Project and shall not resume work until the CONTRACTOR provides evidence, to the OWNER and ENGINEER, in the form of an acceptable insurance certificate, of new insurance coverage that replaces all cancelled coverage that is required for the Project.”

Add two new paragraphs immediately after paragraph 5.04B of the General Conditions which are to read as follows:

“C. The CONTRACTOR shall also provide:

1. CONTRACTOR shall, as a minimum, purchase and maintain excess liability insurance in the umbrella form with a combined single limit of not less than $5,000,000 per occurrence and in the aggregate. Evidence of such excess liability shall be delivered to OWNER in accordance with paragraph 2.05C in the form of a certificate indicating the policy numbers and limits of liability of all underlying insurance.

A. General Liability, Workers’ Compensation, Automobile Liability and Umbrella Liability Policies will contain waivers of subrogation in favor of the Engineer and Owner.

2. If the aggregate limits of liability indicated in CONTRACTOR’ insurance provided in accordance with paragraphs 5.03 and 5.04 are not sufficient to cover all claims for damages arising from his operations under this Contract and from any other work performed by him or if the commercial general liability insurance policy of insurance does not provide that the general aggregate limits apply on a per project and per location basis, CONTRACTOR shall have the policy amended so that the aggregate
limits of liability required by this Contract will be available to cover all claims for damages due to operations under this Contract."

SC-5.05

Delete paragraph 5.05 of the General Conditions in its entirety.

SC-5.06

Delete Paragraph 5.06 A of the General Conditions in its entirety.
Delete paragraph 5.06B of the General Conditions in its entirety.
Delete Paragraph 5.06C of the General Conditions in its entirety.
Delete paragraph 5.06D of the General Conditions in its entirety.
Delete paragraph 5.06E of the General Conditions in its entirety.

SC-5.07

Amend the last sentence of paragraph 5.07A of the General Conditions by striking out the words "held by OWNER as trustee or." As so amended, paragraph 5.07A remains in effect.

SC-5.08

Delete paragraph 5.08A of the General Conditions in its entirety.
Delete paragraph 5.08B of the General Conditions in its entirety.

SC-5.09

Delete paragraph 5.09A of the General Conditions in its entirety and insert the following in its place:

"A. If OWNER has any objection to the coverage afforded by or other provisions of the insurance required to be purchased and maintained by CONTRACTOR in accordance with this Article 5 on the basis of its not complying with the Contract Documents, OWNER will notify CONTRACTOR in writing thereof within thirty days of the date of delivery of such certificates to OWNER in accordance with paragraph 2.05C. CONTRACTOR will provide such additional information in respect of insurance provided by him as OWNER may reasonably request."

ARTICLE 6. CONTRACTOR'S RESPONSIBILITIES

SC-6.01
Delete paragraph 6.01B of the General Conditions in its entirety and replace with the following:

"B. At the site of the Work the CONTRACTOR shall employ a full-time construction superintendent or foreman who shall have full authority to act for the CONTRACTOR. It is understood that such representative shall be acceptable to the ENGINEER and shall be one who will be continued in the capacity for the particular job involved unless the representative ceases to be on the CONTRACTOR's payroll. If at any time during the Work the representative is deemed by the ENGINEER to be no longer acceptable, the representative shall be promptly replaced by the CONTRACTOR. All communications to the superintendent or foreman shall be as binding as if given to the CONTRACTOR."

SC-6.04

Add the following paragraph after paragraph 6.04A.2 of the General Conditions:

"B. The CONTRACTOR's resident superintendent shall attend monthly progress meetings at the site of the work with the ENGINEER and others as appropriate to review schedule status and such other pertinent subjects as may be listed on the agenda by the ENGINEER."

SC-6.05

Revise the second sentence of Paragraph A to read as follows:

“Unless the specification indicates that a proprietary item is called for, other items of material or equipment or material or equipment of other suppliers may be submitted to ENGINEER for review under the circumstances described below, and in accordance with MGL c.30, s.39M.”

SC-6.17

In paragraph 6.17 E.1 of the General Conditions, delete the word “timely” from the first line.

SC-6.20

Delete paragraph 6.20A of the General Conditions in its entirety and replace with the following:

"A. To the fullest extent permitted by law, the CONTRACTOR shall indemnify and hold harmless the OWNER, the ENGINEER, ENGINEER's consultants, and any of their officers, directors, employees, agents, affiliates, subsidiaries and partners from and against all claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from the performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including loss of use resulting therefrom, but only to the extent caused in whole or in part by acts or omissions of the CONTRACTOR, a subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall apply to any such claims, damages, losses and expenses which arise and/or
are incurred by any person or entity either during the performance of the Work and/or after completion of construction. Nothing in this paragraph shall be construed to negate, abridge, or reduce other rights or obligations of indemnity or contribution which would otherwise exist as to a party or person indemnified hereunder. CONTRACTOR hereby assumes the responsibility and liability for injury to or death of any and all persons, including the CONTRACTOR's employees, and for any and all damage to property caused by, resulting from, or arising out of any act, omission or neglect on the part of the CONTRACTOR, or of any Subcontractor or of anyone directly or indirectly employed by any of them or of anyone for whose acts, any of them may be liable. The Contractor hereby acknowledges its obligation under the foregoing paragraph to indemnify the Engineer and Owner against judgments suffered because of the contractor's work and to assume the cost of defending the Engineer and Owner against claims as described in the foregoing paragraph."
SC-9.10

Insert the following after the first sentence on paragraph 9.10B:

“However, the ENGINEER shall have the right to direct the CONTRACTOR to perform the Work according to any sequence schedule set forth in the Contract Documents or established pursuant thereto.”

ARTICLE 11. COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

Delete Article 11 of the General Conditions in its entirety and replace with the following:

"A. The unit price of an item of Unit Price work shall be subject to reevaluation and adjustment under the following conditions:

(1) If the total extended bid price [Estimated Quantity times the Bid Unit Price] of a particular item of Unit Price Work amounts to 5 percent or more of the Original Contract Price and the variation in the quantity of the particular item of Unit Price Work performed by CONTRACTOR differs by more than 15 percent from the estimated quantity of such item indicated in the Agreement; and

(2) If there is no corresponding adjustment with respect to any other item of work; and

(3) If CONTRACTOR believes that CONTRACTOR has incurred additional expense as a result thereof, CONTRACTOR may make a claim for an adjustment in the Contract Price in accordance with Article 11 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed. If OWNER believes that the quantity variation entitles OWNER to an adjustment in the unit price, OWNER shall be entitled to an adjustment in the unit price in an amount determined by the ENGINEER. ENGINEER shall not be liable in connection with any determination relating to adjustments which is rendered in good faith.”

ARTICLE 12. CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

SC-12.01

Delete paragraph 12.01 in its entirety.

SC-12.06

Add the following new paragraphs after paragraph 12.06 of the General Conditions:

“12.07 Liquidated Damages:
A. If the CONTRACTOR shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the OWNER, then the CONTRACTOR does hereby agree, as a part consideration for the awarding of this Contract, to pay to the OWNER the amount specified in the Contract, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contract shall be in default after the time stipulated in the Contract for completing the work. Such damages may be retained from time to time by the OWNER from progress payments or any amounts owing to the CONTRACTOR, or otherwise collected.

B. The said amount is fixed and agreed upon by and between the CONTRACTOR and the OWNER because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the OWNER would in such event sustain, and said amount is agreed to be the amount of damages which the OWNER would sustain and said amount shall be retained from time to time by the OWNER from current periodical estimates.

C. It is further agreed that time is of the essence of each and every portion of this Contract and of the specifications wherein as definite and certain length of times if fixed for the performance of any act whatsoever; and where under the Contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this Contract. Provided that the CONTRACTOR shall not be charged with liquidated damages of any excess cost when the OWNER determines that the CONTRACTOR is without fault and the CONTRACTOR's reasons for the time extension are acceptable to the OWNER; Provided, further, that the CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

1) to any preference, priority or allocation order duly issued by the Government;

2) to unforeseeable cause beyond the control and without the fault or negligence of the CONTRACTOR, including, but not restricted to, acts of God, or of the public enemy, acts of the OWNER, acts of another CONTRACTOR in the performance of a contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather; and

3) to any delays of subcontractors or suppliers occasioned by any of the causes specified in subsections C (1) and C (2) above;

D. Provided, further, that the CONTRACTOR shall, within thirty (30) days from the beginning of such delay, unless the OWNER shall grant a further period of time prior to the date of final settlement of the Contract, notify the OWNER, in writing, of the causes of the delay, who shall ascertain the facts and extent of the delay and notify the CONTRACTOR within a reasonable time of its decision in the matter."

ARTICLE 13. TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK
Delete paragraph 13.07A of the General Conditions and insert the following in its place:

“A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions: (i) correct such defective work, or, if it has been rejected by OWNER, remove it from the site and replace it with work that is not defective, and (ii) satisfactorily correct or remove and replace any damage to other work or the work of others therefrom. If CONTRACTOR does not begin the repairs within ten (10) days of receipt of written notification and promptly comply with the terms of OWNER's written instructions, or in an emergency where delay would cause serious risk, loss or damage, OWNER may have the defective work corrected or the rejected work removed and replaced, and all claims, costs, losses and damages caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.”

Revise paragraph 13.09A of the General Conditions

A. Delete the word “seven” and replace it with the word “ten” so that it reads “after ten days written notice to CONTRACTOR.”

ARTICLE 14. PAYMENTS TO CONTRACTOR AND COMPLETION

Delete paragraph 14.02A.3 and insert the following in its place:

"3. Retainage with respect to progress payments will be five percent or, if stipulated, the maximum allowed by law."

Add Paragraph 4. to read as follows:

“4. The CONTRACTOR shall submit Weekly Payroll Records Report and Statement of Compliance verifying compliance with the Minimum Prevailing Wage Law, MGL ch. 149, Sections 26-27H. These Statements of Compliance shall be submitted as a condition of payment for work performed during the period the reports apply.”

Delete paragraph 14.03A in its entirety and insert the following in its place:
"A. CONTRACTOR warrants and guarantees that title to all work, material and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than at the time of Application for Payment free and clear of all liens. CONTRACTOR shall provide written transfer of title and a certified paid invoice provided by the supplier."

ARTICLE 15. SUSPENSION OF WORK AND TERMINATION

SC-15.02

Add a new paragraph immediately after paragraph 15.02 A.4 of the General Conditions which is to read as follows:

"5. If the Work to be done under this Contract shall be abandoned, or if this Contract or any part thereof shall be sublet, without the previous written consent of OWNER, or if the contract or any claim thereunder shall be assigned by CONTRACTOR otherwise than as herein specified;"

ARTICLE 17. MISCELLANEOUS

SC-17.06, 17.07, 17.08, 17.09

Add the following new paragraphs after paragraph 17.05 of the General Conditions:

"17.06 Assignment:

A. The CONTRACTOR shall not assign the whole or any part of this Contract or any moneys due or to become due hereunder until thirty (30) days prior notice in writing has been given to the OWNER of the intention to assign, which notice shall state the identity and address of the prospective assignee. No assignment shall be made without the OWNER’s prior written consent. Such consent shall not be unreasonably withheld. In case the CONTRACTOR assigns all or any part of the moneys due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any moneys due or to become due under the CONTRACTOR shall be subject to prior claims of all persons, firms and corporations of services rendered or materials supplied for the performance of the work called for in this Contract.”

17.07 Liability

It is understood and agreed that members of the OWNER or the ENGINEER or any agent or employees of the OWNER signing this Agreement shall not be personally liable hereunder for any action incurred in connection with this Agreement.

17.08 State Statutes and Regulations

See Section 00850 for further modifications of the General Conditions due to state statutes and regulations.

08/11/2016 00800-12
17.09 Severability

If any provision of this Agreement shall be invalid or unenforceable to any extent or in any application, then the remainder of this Agreement and of such terms and conditions, except to such extent or in such application, shall not be affected thereby, and each and every term and condition of this Agreement shall be valid and enforced to the fullest extent and in the broadest application permitted by law."

END OF SECTION
ARTICLE 1  STATUTORY REQUIREMENTS IN GENERAL

1.1 The Contractor shall keep himself fully informed of all existing and future State and Federal Laws and Municipal Ordinances and Regulations in any manner affecting those engaged or employed in the work or in any way affecting the conduct of the work, and of all such orders and decrees of bodies or tribunals having jurisdiction or authority over same and of all provisions required by law to be made a part of this contract, all of which provisions are hereby incorporated by reference and made a part thereof. If any discrepancy or inconsistency is discovered in the drawings or specifications or contract documents for this work in relation to any such law, ordinance, regulation, order or decree, he shall forthwith report the same to the Engineer in writing. He shall at all times himself observe and comply with, and shall cause all his agents and employees to observe and comply with, all such existing and future laws, ordinances, regulations, orders and decrees; and he shall protect and indemnify the City and Engineer and all of its and their officers, agents and servants against any claim of liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by himself or his employees or sub-contractors.

1.2 All materials furnished and work done are to comply with all State, Federal and local laws and regulations.

1.3 All applicable laws, ordinances, and rules and regulations of all authorities having jurisdiction over the construction of the project shall apply to the contract throughout.

ARTICLE 2  DELETED

ARTICLE 3  DELETED

ARTICLE 4  SAFETY AND HEALTH REGULATIONS

4.1 The Successful Bidder shall comply with the Department of Labor Safety and Health Regulations for Construction promulgated under the Occupational Safety and Health Act of 1970 (PS-91-569) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL-91-54).

4.2 This project is subject to the Safety and Health Regulations of the Massachusetts Department of Labor and Industries, Division of Industrial Safety "Rules and Regulations for the Prevention of Accidents in Construction Operations (Chapter 454 CMR, 10.0 et. seq.)".

4.3 This project is subject to all of the Safety and Health Regulations (CFR, Part 1926, and all subsequent amendments) as promulgated by the U.S. Department of Labor on June 24, 1974.
and CFR 29, Part 1910, General Industry Safety and Health Regulations Identified as Applicable to Construction.

4.4 The Successful Bidder shall have a competent person or persons, as required under the Occupational Safety and Health Act on the site to inspect the work and to supervise the conformance of the work with the regulations of the Act.

4.5 All excavations within public or private ways are subject to the requirements of the Massachusetts General Law, Acts of 1983, Chapter 353, included in Part II of the Supplementary Conditions.

ARTICLE 5 PERMITS AND LICENSES

5.1 Deleted

5.2 The Contractor shall procure all permits and licenses required, pay all charges and fees therefore, and shall give all notices necessary and incidental to the due and lawful prosecution of the Project. The cost thereof shall be included in the prices bid for the various items listed in the proposal.

   The permits shall also include all building and other permits required for his equipment, work force or particular operations (such as blasting or local street opening permits), in the performance of the work.

ARTICLE 6 CHANGE ORDERS

6.1 Change Orders will be completed by the Contractor using the form enclosed on the following page. The City will not accept any other form as a substitute.
City of Quincy, Massachusetts
Purchasing Department
1305 Hancock Street, Quincy, MA 02169

CHANGE ORDER/AMENDMENT #

Made in Quintuplicate this day (DATE) between the City of Quincy, Massachusetts, a Municipal Corporation, within the County of Norfolk, Party of the first part and (name & address of Company below)

party of the second part.

WITNESSETH: That for and in consideration of the following mutual covenants contained herein the parties agree to amend Contract # (Contract of the City of Quincy, dated between the same parties as follows:

ARTICLE I: In Article I, we are INCREASING/DECREASING the Contract by $ (Attached - Refer to Page 2)
Because: (list below reason)
Justification: (Attached - Refer to Page 2)

ARTICLE II: In Article II of the Contract, for (SPECIFY COMMODITY) between the same parties, strike out the words and figures: $ and substitute the words and figures: $

AMOUNT IN WORDS

WITNESS: CITY OF QUINCY

WITNESS (CITY OF QUINCY) MAYOR

Sufficient funds are available to cover this change order in the contract account to be charged.

CITY AUDITOR PURCHASING AGENT

P.O. #: CODE:

VENDOR SIGNATURE

COMMISSIONER OF PUBLIC WORKS

00850-3
PROJECT NAME: _____________________________
PROJECT NUMBER: __________________________
CONTRACT #: ______________________________
CHANGE ORDER #: __________________________
CONTRACT AMOUNT: (As bid): ____________________
CHANGE IN CONTRACT PRICE (this change order): ______________________
TOTAL ADJUSTED CONTRACT PRICE (including all COs): _____________________

Reason for Change Order:
(1) Additional Work _______ (2) Field Change _______
(3) Change in Bid Quantities _______ (4) Change in Schedule _______

a. Time to complete the work is extended by _______ calendar days.
b. Extended completion date is ________________________________

Reason & Description of Change:

Supporting Documents (List or attach, as necessary):

This Change Order Has Been Requested By: CONTRACTOR _______ CITY _______

This Change Order Has Been Reviewed by: ________________________________ (Resident Engineer/Clerk of Works) (Date)

and ________________________________ (City/Consultant Engineer/Architect) (Stamp/#) (Date)
ARTICLE 7

SUPPLEMENTARY CONDITIONS - COMMONWEALTH OF MASSACHUSETTS

INDEX

All Mass. General Laws listed below are deemed inserted by reference in this contract. It is understood that the latest amendments to these laws shall also be inserted by reference.

1. METHOD OF PAYING SUBCONTRACTORS
   MGL C. 30; s. 39F

2. METHOD OF PAYING GENERAL CONTRACTORS - COMPLETION OF PUBLIC WORKS: SEMI-FINAL AND FINAL ESTIMATES: PAYMENTS: EXTRA WORK: DISPUTED ITEMS
   MGL C. 30, s. 39G

3. CLAIMS FOR UNFORESEEN CONDITIONS
   MGL C.30, s. 39N

4. CLAIMS FOR DELAY
   MGL C.30, s. 39O

5. DECISIONS AND APPROVALS BY ENGINEER OR ARCHITECT
   MGL C 30, s. 39P

6. PREFERENCE IN EMPLOYMENT, WAGES
   MGL C.149, s.26

7. HOURS OF WORK
   MGL C.149, s.34

8. WORK BY FOREIGN CORPORATIONS
   MGL C.30, s. 39L

9. MINIMUM WAGE RATES
   MGL C. 149, s. 26-27D

10. RECORD KEEPING
    MGL C. 30, S. 39R

00850-5
ARTICLE 8
THE COMMONWEALTH OF MASSACHUSETTS
&
CITY OF QUINCY
SUPPLEMENTAL EQUAL EMPLOYMENT OPPORTUNITY
ANTI-DISCRIMINATION AND AFFIRMATIVE ACTION PROGRAM

I. For purposes of this contact, "minority" refers to Asian-Americans, Blacks, Spanish Surnamed Americans, North American Indians, and Cape Verdeans. "Commission" refers to the Massachusetts Commission Against Discrimination.

II. During the performance of this contract, the contractor and all of his subcontractors (hereinafter collectively referred to as the Contractor), for himself, his assignees and successors in interest, agree as follows:

1. In connection with the performance of work under this contract, the Contractor shall not discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, age or sex. The aforesaid provision shall include, but not be limited to the following: employment upgrading, demotion or transfer, recruitment advertising, recruitment layoff, termination, rates of pay or other forms of compensation, conditions or privileges of employment, and selection for apprenticeship. The Contractor shall post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the Commission setting forth the provisions of the Fair Employment Practices Law of the Commonwealth (M.G.L. Chapter 151B).

2. In connection with the performance of work under this Contract, the Contractor shall undertake in good faith affirmative action measures designed to eliminate any discriminatory barriers in the terms and conditions of employment on the grounds of race, color, religious creed, national origin, age or sex, and to eliminate and remedy any effects of such discrimination in the past. Such affirmative action shall entail positive and aggressive measures to ensure equal opportunity in the areas of hiring, upgrading, demotion or transfer, recruitment, layoff or termination, rate of compensation, and in-service or apprenticeship training programs. This affirmative action shall include all action required to guarantee equal employment opportunity for all persons, regardless of race, color, religious creed, national origin, age or sex. A purpose of this provision is to ensure to the fullest extent possible an adequate supply of skilled tradesmen for this and future Commonwealth public construction projects.

00850-6
III. 1. As part of his obligation of remedial action under the foregoing section, the Contractor shall maintain on this project a not less than 10% ratio of minority employee man hours to total man hours in each job category including but not limited to bricklayers, carpenters, cement masons, electricians, ironworkers, operating engineers, and those "classes of work" enumerated in Section 44C of Chapter 149 of the Massachusetts General Laws.

2. In the hiring of minority journeymen, apprentices, trainees and advanced trainees, the Contractor shall rely on referrals from a multi-employer affirmative action program approved by the Commission, traditional referral methods utilized by the construction industry, and referrals from agencies, not more than three in number at any one time, designated by the Liaison Committee or the Commission.

IV. 1. At the discretion of the Commission there may be established for the life of this contract a body to be known ad the Liaison Committee. The Liaison Committee shall be composed of one representative each from the agency or agencies administering this project, hereinafter called the administering agency, the Commission and such other representatives as may be designated by the Commission in conjunction with the administering agency.

2. The Contractor (or his agent, if any, designated by him as the on-site equal employment opportunity officer) shall recognize the Liaison Committee as an affirmative action body, and shall establish a continuing working relationship with the Liaison Committee, consulting with the Liaison Committee on all matters related to minority recruitment, referral, employment and training.

3. The Contractor shall prepare projected manning tables on a quarterly basis. These shall be broken down into projections, by week, or workers required in each trade. Copies shall be furnished one week in advance of the commencement of the period covered, and also when updated to the Commission and Liaison Committee.

4. Records of employment referral orders, prepared by the Contractor, shall be made available to the Commission and to the Liaison Committee on request.

5. The Contractor shall prepare weekly reports in a form approved by the Commission of hours worked in each trade by each employee, identified as minority or non-minority. Copies of these shall be provided at the end of each such week to the Commission and to the Liaison Committee.

V. If the Contractor shall use any subcontractor on any work performed under this contract, he shall take affirmative action to negotiate with qualified minority subcontractors. This affirmative action shall cover both pre-bid and post-bid periods. It shall include modification
to the Office of Minority Business Assistance (within the Executive Office of Communities and Development) or its designee, while bids are in preparation, of all products, work or services for which the Contractor intends to negotiate bids.

VI. In the employment of journeymen, apprentices, trainees and advanced trainees, the Contractor shall give preference, first, to citizens of the Commonwealth who have served in the armed forces of the United States in time of war and have been honorably discharged therefrom or released from active duty therein, and who are qualified to perform the work to which the employment related, and, secondly, to citizens of the Commonwealth generally, and, if such cannot be obtained in sufficient numbers, then to citizens of the United States.

VII. A designee of the commonwealth and a designee of the Liaison Committee shall each have right of access to the construction site.

VIII. Compliance with Requirements

The Contractor shall comply with the provision of Executive Order No. 74 as amended by Executive Order No.116 dated May 1, 1975, and of Chapter 151B, as amended, of the Massachusetts General Laws, both of which are herein incorporated by referenced and made a part of this contract.

IX. Non-Discrimination

The Contractor, in the performance of all work after award, and prior to completion of the contract work, will not discriminate on grounds of race, color, religious creed, national origin, age or sex in employment practices in the selection or retention of subcontractors, or in the procurement of materials and rentals of equipment.

X. Solicitations for Sub-Contracts, and for the Procurement of Materials and Equipment

In all solicitations either by competitive bidding or negotiation made by the Contractor either for work to be performed under a subcontract or for the procurement of materials or equipment, each potential subcontractor or supplier shall be notified in writing by the Contractor of the Contractor's obligations under this Contract relative to non-discrimination and affirmative action.

XI. Bidders Certification Requirement

1. The bidders certification form currently in use will be deleted from all future bid documents.

2. The following certification statement will be inserted in the bid document just above
the bidder's signature, as a substitute for the present bidder certification form.

"The bidder hereby certifies he shall comply with the minority manpower ratio and specific action steps contained in the appendix EEO attached hereto, including compliance with the minority contractor compliance specified in Section V of said appendix. The contractor receiving the award of the contract shall be required to obtain from each of its subcontractors and submit to the contacting or administering agency prior to the performance of any work under said contract a certification by said subcontractor, regardless of tier that it will comply with the minority manpower ratio and specific affirmative action steps contained in the appendix EEO.

XII. Contractor's Certification

The Contractor's certification form must be signed by all successful low-bidder(s) prior to award by the contracting agency.

XIII. Compliance-Information, Reports and Sanctions

1. The Contractor will provide all information and reports required by the administering agency or the Commission on instructions issued by either of them and will permit access to its facilities and any books, records, accounts and other sources of information which may be determined by the Commission to affect the employment of personnel. This provision shall apply only to information pertinent to the Commonwealth's supplementary affirmative action contract requirements. Where information required is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the administering agency or the Commission as appropriate and shall set forth what efforts he has made to obtain the information.

2. Whenever the administering agency, the Commission, or the Liaison Committee believes the General Contractor or any Subcontractor may not be operating in compliance with the terms of this Section, the Commission directly, or through its designated agent, shall conduct an appropriate investigation, and may confer with the parties, to determine if such Contractor is operating in compliance with the terms of this Section. If the Commission or its agent finds the General Contractor or any subcontractor not in compliance, it shall make a preliminary report on non-compliance, and notify such Contractor in writing of such steps as will in the judgement of the Commission or its agent bring such Contractor into compliance. In the event that such Contractor fails or refuses to fully perform such steps, the Commission or its agent shall make a final report of non-compliance, and recommend to the administering agency the imposition of one or more of the sanctions listed below. If, however, the Commission believes the General Contractor or any Subcontractor has taken or is taking every possible measure to achieve
compliance, it shall not make a final report of non-compliance. Within fourteen days of the receipt of the recommendations of the Commission, the administering agency shall move to impose one or more of the following sanctions, as it may deem appropriate to attain full and effective enforcement:

a. The recovery by the administering agency from the General Contractor of 1/100 of 1% of the contract award price or $1,000, whichever sum is greater, in the nature of liquidated damages or, if a subcontractor is in non-compliance, the recovery by the administering agency from the General Contractor, to be assessed by the General Contractor as a back charge against the Subcontractor, of 1/10 of 1% of the subcontract price, or $400., whichever is greater, in the nature of liquidated damages, for each week that such party fails or refuses to comply;

b. The suspension of any payment or part thereof due under the contract until such time as the General Contractor or any Subcontractor is able to demonstrate his compliance with the terms of the contract;

c. The termination, or cancellation of the contract, in whole or in part, unless the General Contractor or any Subcontractor is able to demonstrate within a specified time his compliance with the terms of the contract;

d. The denial to the General Contractor or any Subcontractor of the right to participate in any future contracts awarded by the administering agency for a period of up to three years.

3. If at any time after the imposition of one or more of the above sanctions a Contractor is able to demonstrate that he is in compliance with this Section, he may request the administering agency, in consultation with the Commission, to suspend the sanctions conditionally, pending a final determination by the Commission as to whether the Contractor is in compliance. Upon final determination of the Commission, the administering agency, based on the recommendation of the Commission, shall either lift the sanctions or reimpose them.

4. Sanctions enumerated under Sections XII-2 shall not be imposed by the administering agency except after an adjudicatory proceeding, as that term is used M.G.L. c.30A, has been conducted. No investigation by the Commission or its agent shall be initiated without prior notice to the Contractor.

XIV. Severability

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

301. CMR 50.00: AFFIRMATIVE ACTION

Section

50.01: Declaration of Policy
50.02: Purpose and Scope
50.03: Definitions
50.04: Employment Policies of Agencies Within EÖEA
50.05: State Services and Facilities
50.06: Eligibility for Financial Assistance
(301 CMR 50.07 and 50.08: RESERVED)
50.09: Construction Projects Conducted by Agencies
50.10: Construction Projects Conducted by Grantees
(301 CMR 50.11 through 50.13: RESERVED)
50.14: Compliance and Sanctions
50.15: Severability
50.16: Appendix 1. Executive Order 74 (as amended and revised by Executive Order 116) the Governor's Code of Fair Practices.
50.19: Appendix 4. Fair Housing Guidelines
50.20: Appendix 5. Memorandum of Agreement
50.21: Appendix 6. Goals and Timetables Adopted Pursuant to the Department of Labor's Regulations 41 CFR 60-4.6

50.01: Declaration of Policy

(1) Non-discrimination and equal opportunity are the policy of the Executive Office of Environmental Affairs in all of its decisions, programs and activities. To that end, all agency employees shall rigorously take affirmative steps to ensure equality of opportunity in the internal affairs of all agencies as well as in their relations with the public, including those persons and organizations doing business with any agency of the Executive Office of Environmental Affairs. Each agency, in discharging its decisions, programs and activities shall have in meeting the goal of equality of opportunity.

(2) Affirmative action requires more than vigilance in the elimination of discriminatory barriers on the grounds of race, color, creed, national origin, age, and sex. It must also entail positive and aggressive measures to ensure equal opportunity in internal personnel practices and in those
programs which can affect persons and political subdivisions outside of state government. This affirmative action shall include efforts necessary to remedy the effects of present and past discriminatory patterns and practices and any action necessary to guarantee equal opportunity for all people.

(3) All agencies shall initiate affirmative action programs designed to conform to this policy. All such affirmative action programs shall be subject to review by the Executive Office of Administration and Finance, or such other Office or person as may be designated by the Governor, and the Massachusetts Commission Against Discrimination, as provided in 301 CMR 50.16 (Appendix 1, Executive Order 74, as amended by Executive Order No. 116, the Governor’s Code of Fair Practice).

(4) All powers, functions and duties granted to the Secretary of Environmental Affairs under any provision of law shall be construed liberally for the accomplishment of these regulations.

These regulations establish the procedures by which the Executive Office of Environmental Affairs and all its agencies shall comply with the policy and requirements for equal employment opportunity and affirmative action.

50.10 Construction Projects Conducted by Grantees

(1) Before any applicant receives any financial assistance, including state assisted or federally assisted construction grants awarded under any program administered by an agency, the Secretary must have determined that such applicant is in compliance with the Equal Employment Opportunity Guidelines and Fair Housing Guidelines of the Commission, as they may be amended from time to time (301 CMR 50.18 Appendix 3 and 50.19 Appendix 4 of these regulations) according to the procedures set forth in 301 CMR 50.06 of these regulations.

(2) Every state or state-assisted or federal or federally-assisted contract for public buildings and public works or for goods or services that is let by a grantee shall contain an article prohibiting discriminatory employment practices by contractors, subcontractor, and suppliers of goods or services based on race, color, religion, national origin, ancestry, age or sex. The non-discrimination article shall include a provision requiring contractors and suppliers of goods or services to give written notice of their commitments under this section to any labor union, association or brotherhood with which they have a collective bargaining or other agreement. Such notice shall also be given to the Commission and to SOMBA.

(3) Grantees shall adopt for use in all contracts for construction projects with a dollar value in excess of ten thousand dollars ($10,000.) an adapted version of the Commonwealth of Massachusetts Supplemental Equal Employment Opportunity Anti-Discrimination and Affirmative Action Program (Supplemental Program) (301 CMR 50.17 Appendix 2 of these regulations). Such contract may include minority workforce percentages greater than those required for the geographical locations of the construction project as set forth in the Supplemental Program.
(4) Grantees shall take affirmative steps to increase participation of minority business enterprise (MBEs) in any construction grant.

(5) Prior to the publication of the availability of contracts for construction work to be performed under any construction grant with a total dollar value in excess of ten thousand dollars ($10,000.), the grantee shall notify SOMBA of its intent to solicit bids and shall make available to SOMBA, upon request, copies of the proposal to bid, specifications and plans, and bid invitations.

(6) At the discretion of the Commission there may be established for the life of any construction contract a body to be known as the Liaison Committee, which may be the Executive Office Liaison Committee as established by 301 CMR 50.09 (3) of these regulations. A representative of the grantee shall be a member of the Liaison Committee. The contractor or his agent shall recognize the Liaison Committee as an affirmative action body, and shall establish a continuing working relationship with the Liaison Committee, consulting with the Liaison Committee on all matters related to minority recruitment, referral, employment and training.

(7) Before making the final allocation of funds to any grantee, the Secretary shall review any contracts for construction work to be performed under the grantee, to ascertain the grantee's compliance with the provisions of these regulations.
MINIMUM PERCENTAGES TO BE APPLIED TO STATE AND STATE-ASSISTED CONTRACTS WITHIN THE COMMONWEALTH OF MASSACHUSETTS

The following percentages shall apply

<table>
<thead>
<tr>
<th>Area</th>
<th>Not Less Than:</th>
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<tbody>
<tr>
<td>Boston:</td>
<td></td>
</tr>
<tr>
<td>Impact Area (Jamaica Plain (part),</td>
<td>30%</td>
</tr>
<tr>
<td>Mattapan, South Cove, Chinatown, Bay</td>
<td></td>
</tr>
<tr>
<td>Village, Roxbury, Dorchester, South End.</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>10%</td>
</tr>
<tr>
<td>Cambridge:</td>
<td>12%</td>
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<tr>
<td>New Bedford:</td>
<td>18%</td>
</tr>
<tr>
<td>Springfield:</td>
<td>10%</td>
</tr>
<tr>
<td>All other cities and towns</td>
<td>10%</td>
</tr>
</tbody>
</table>
Be it ordered that Chapter 24 of the Zoning Ordinance of the City of Quincy as amended, be further amended in Art. VIII, by adding a new section 87: Blasting.

Section 87

1. Pre-blast Survey

a. For all permits issued for blasting (rock excavation) in the City of Quincy, a pre-blast survey must be made by the contractor or by an approved firm in this kind of work and satisfactory to the contractor's insurance company.

b. The pre-blast survey will include a survey of the interior and exterior of existing buildings and stone walls adjacent to the project as specified herein, before any excavation or blasting is done. Written approval must be secured from the Fire Chief, City Engineer and Building Inspector serving as the Committee on Blasting.

c. The survey shall record all visible structural defects such as cracks, settlement and lines out of plumb.

d. The survey data shall be recorded in a permanent manner in approved hardbound notebooks. The survey data shall include polaroid photographs showing the building constructions surveyed referenced to the notebook pages. Also a tape recording of all data pertinent to the survey shall be made. The scope and format of the record survey data shall be satisfactory to the Committee on Blasting. Before commencing any blasting or ledge excavation, copies of the survey must be on file at the offices of the Quincy City Engineer, and Quincy City Clerk, City Hall, Quincy, MA.

e. The adjacent area requiring the pre-blasting survey is specified as all buildings and stone walls within a radius of three hundred fifty feet (350) from said blast.

f. Provided, however, that no pre-blasting survey shall be required if blasting is within the following limits: The total charge weight per blast does not exceed five (5) pounds and the maximum weight per delay does not exceed two pounds per delay.

YEAS Cahill, Cheney, Chretien, DeCristofaro, McGrath, Nutley, Phelan, Sheets, Toland

NAYS Cahill, Cheney, Chretien, DeCristofaro, McGrath, Nutley, Phelan, Sheets, Toland
g. If blasting is designed to excavate more than a ten (10) cubic yard area, the contractor must post a bond with the City of Quincy. The amount of said bond shall be determined by the Committee on Blasting. The Committee on Blasting will not release the bond until it is convinced that all judgments and claims have been reasonably dealt with by the contractor.

h. All blasting is to be supervised on site by an authorized member of the Fire Department, assigned by the Chief, and the cost of said supervision shall be the sole responsibility of the contractor.

i. Any person who shall violate any of the provisions of this ordinance, as determined by the Committee on Blasting, or who fails to comply therewith, shall severally, for each and every violation and noncompliance respectively, be liable to a penalty of two hundred dollars ($200.00) for each offense.

PASSED TO BE ORDAINED OCTOBER 16, 1988

ATTEST

CLERK OF COUNCIL

APPROVED

OCT 23, 1988

MAYOR

YEAS Cahill, Cheney, Chretien, DeCristofaro, McGrath, Nutley, Phelan, Sheets, Tolland

NAYS Cahill, Cheney, Chretien, DeCristofaro, McGrath, Nutley, Phelan, Sheets, Tolland
Equitable adjustment in contract price for differing subsurface or latent physical conditions

If, during the progress of the work, the contractor or the awarding authority discovers that the actual subsurface or latent physical conditions encountered at the site differ substantially or materially from those shown on the plans or indicated in the contract documents either the contractor or the contracting authority may request an equitable adjustment in the contract price of the contract applying to work affected by the differing site conditions. A request for such an adjustment shall be in writing and shall be delivered by the party making such claim to the other party as soon as possible after such conditions are discovered. Upon receipt of such a claim from a contractor, or upon its own initiative, the contracting authority shall make an investigation of such physical conditions; and, if they differ substantially or materially from those shown on the plans or indicated in the contract documents or from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the plans and contract documents and are of such a nature as to cause an increase or decrease in the cost of performance of the work or a change in the construction methods required for the performance of the work which results in an increase or decrease in the cost of the work, the contracting authority shall make an equitable adjustment in the contract price and the contract shall be modified in writing accordingly.
SECTION 00890

PERMITS

PART 1 – GENERAL

1.01 DESCRIPTION:

This Section provides specific information and defines specific requirements of the Contractor regarding the preparation and acquisition of permits required to perform the work of this project.

1.02 RELATED WORK:

A. SECTION 01110, CONTROL OF WORK AND MATERIALS
B. SECTION 01550, SIGNAGE (TRAFFIC CONTROL)
C. SECTION 01570, ENVIRONMENTAL PROTECTION
D. SECTION 02240, DEWATERING
E. SECTION 02300, EARTHWORK

1.03 GENERAL REQUIREMENTS:

A. The Owner has obtained or will obtain the permits listed below, which are required for this project. The Contractor shall assist in obtaining certain permits, as indicated. The Contractor shall obtain and pay for all other permits required, as defined under the Permits subsection of Section 00700, GENERAL CONDITIONS.
<table>
<thead>
<tr>
<th>Permits by Owner</th>
<th>Status</th>
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<tbody>
<tr>
<td>DCR Construction Access Permit</td>
<td>Pending</td>
</tr>
<tr>
<td>MWRA 8(m) Water Permit</td>
<td>Pending</td>
</tr>
<tr>
<td>MWRA 8(m) Sewer Permit</td>
<td>Pending</td>
</tr>
<tr>
<td>Local Road Opening Permit</td>
<td>*</td>
</tr>
<tr>
<td>Trench Permit (520 CMR 14.00)(eff. date 3/1/09)</td>
<td>*</td>
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<tr>
<td>Plumbing Permit</td>
<td>*</td>
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</tbody>
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*Contractor shall prepare permit application and obtain the permit after contract is awarded, bearing all expenses.

**PART 2 - PRODUCTS**

Not Used.

**PART 3 – EXECUTION**

3.01 **PERFORM WORK IN ACCORDANCE WITH REQUIREMENTS:**

A. The Contractor shall perform the work in accordance with the Contract Documents, including the attached permits, and any applicable municipal requirements.

B. Prior to commencing any construction activities, the Contractor shall demonstrate to the Owner and the Engineer, through on-site inspection and submitting copies of permits or approvals, that it is in full compliance with the terms and conditions of all permits specified herein. The Contractor shall maintain full compliance with all permits throughout the performance of the work, and upon request, grant access to permitting authorities to inspect the site for the purpose of verifying such compliance.

**END OF SECTION**
November 23, 2016

Mr. Christian Delaney
Director of Permits
Department of Conservation and Recreation ("DCR")
Permit Section, 251 Causeway Street, 7th Floor
Boston, MA 02114

Re: Permit to Access DCR Roadway
   Lead Service Replacement Program, Quincy, Massachusetts

Dear Mr. Delaney:

On behalf of the City of Quincy, Weston & Sampson is submitting this Permit Application for Construction and Associated Access to DCR Park Lands and Roadways, to request access to Furnace Brook Parkway for the purpose of replacing a lead water service at 1022 Furnace Brook Parkway. We have enclosed the permit application, specifications, details, and traffic control safety plan describing the proposed work.

The scope of work within the DCR roadway limits includes installation of new copper piping and appurtenances, excavation, backfilling, loaming and seeding, and resetting of existing granite curbing. All work is expected to take place in the sidewalk and grass strip on the eastern side of Furnace Brook Parkway. No work is expected to take place within the travelled way. The work is expected to be completed in one day.

All sidewalks impacted by construction will be replaced with material matching the existing sidewalk surface and shall conform to the most recent ADA or AAB standards, whichever is more stringent. All sidewalk trench fill will be MassDOT – M1.03.0 “Type C” Gravel Borrow with 2-inch maximum stone size. All disturbed curbing will be reset.

Vehicular and pedestrian traffic will be maintained during construction activities; however, traffic lanes may be shifted and reduced in size. Temporary barriers, cones, drums, signing, and police details will be utilized per the MUTCD. The roadway will be cleared of traffic control devices and opened to full capacity during non-working hours.

The City respectfully requests the permit application fee be waved and that DCR allow the proposed work within the DCR roadway to occur between the hours of 7:00 AM and 4:00 PM, Monday to Fridays, holidays excluded. The water service at 1022 Furnace Brook Parkway will be replaced as part of a city wide water service replacement project, which will be publicly bid this winter. Construction is expected to begin in April 2017 and will conclude in September 2017. Once a contractor has been selected and a progress schedule has been submitted, the DCR will be informed of the approximate start date of construction a week in advance of any work on Furnace Brook Parkway.

While not anticipated, if required by construction activities, all excavations within the DCR roadway travelled way will be backfilled with Controlled Density Fill (CDF) Type 2E “Flowable and Excavatable”, from 12-inches above pipe crown to base course grade. The City prefers backfilling and compacting immediately around the pipe with suitable trench spoils to protect the pipe from the corrosive nature of the CDF. Trenches with CDF will be covered with steel plates and left overnight to allow for curing. After the CDF has cured, the water service trench will then be permanently paved.
If required by construction activities, permanent trench pavement will consist of 1½-inch top course pavement, 2-inch binder course pavement, and 4-inch base course pavement. The trench will be saw-cut and have 24-inch cutbacks on each side of the trench. Tack coats shall be applied to pavement edges and surfaces prior to placing any pavement lift.

If you should have any questions or require additional information, please do not hesitate to contact me at 978-977-0110 ext. 2352 or warnerm@wseinc.com.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.

[Signature]

Michael D. Warner, P.E.,
Project Manager

Enclosures

c: Paul Della Barba, City of Quincy

Z:\MA-Peabody-Projects\Quincy MA\Lead Service Replacement Program 2163629\Permits\DCR\Phase 1 - Lead Services\DCR Permit Cover Letter.docx
PERMIT APPLICATION FOR CONSTRUCTION & ASSOCIATED ACCESS TO DCR PARK LANDS & ROADWAYS

Application DATE: November 16, 2016  Permit Requested by: The City of Quincy, MA
PROPOSED Construction Start Date: Spring 2017  Completion Date: Fall 2017

1. PROJECT LOCATION: Furnace Brook Parkway
   DCR Property: Address: Street 1022 Furnace Brook Parkway. Quincy, MA
   Town/City

2. PROJECT DESCRIPTION: Attach a locus plan of the area + a minimum of 3 photos of the existing work location conditions, taken from different angles.
   Replacement of a lead water service located at 11022 Furnace Brook Parkway

3. PROJECT IMPLEMENTATION INFORMATION: how performed; implemented, within, and short term and long term impacts to DCR property. Submit one full size set of construction engineering plans (+ e-data) additional copies shall be submitted upon request. Either clearly mark drawings relevant to DCR property or remove all drawings not relevant to DCR.
   See cover letter

4. TIME FRAME: Desired project start date & how long it will take to complete planning and construction
   Spring 2017 to Fall 2017

5. AREA USED AND OR IMPACTED: Length width and depth of DCR area being used and or altered:
   A 4-foot wide by 5-foot deep trench, approximately the width of the roadway and the sidewalk.

6. DCR restricted roadways access: provide proposed travel route, schedule for roadway usage, and vehicle proportions (weight, height, & length)
   Typical materials and equipment associated with utility trenching and installation will require access to the roadway

7. Material transportation and or temporary placement of equipment and/or vehicles (lay down area) on or over DCR property provide specifications on travel route and vehicle specifications (load weight and dimensions and Cargo description)
   No equipment or materials will be stored on DCR property overnight. Service replacement work will be completed in one day and the roadway will be platted. Permanent paving operations will be completed approximately 24 hours after.

8. Traffic Management Plan (TMP) is required and shall conform to current Federal Highway Standards certified by a Traffic Engineer or Traffic Control Technician. please submit a full size set (24"x36") copies:
   1 # of pages/ plans attached

9. Dig Safe #: N/A 10. List OTHER PERMIT & LICENSES: MWRA 8(e) - Pending

11. Applicant Information (Permit Signatory, Proponent, Property Owner, Consultant, primary contact)
    Daniel Raymond
    Print Name: Public Works Commissioner
    Mailing Address: 55 Sea Street Quincy, MA 02169
    Telephone #: 617-376-1959
    Fax: E-Mail: 

12. On site contact (Contractor, engineer, installer, utility, management co...):
    Check here if second signatory on permit.

*Signature denotes acceptance of the conditions of the DCR Construction/Access Permit

Return completed application; with the $50.00 application fee to:
DCR: PERMIT SECTION, 251 Causeway Street, 7th Fl. Boston, MA 02114, attn Construction/Access Permits

For Office Use Only   Do Not Write Below This Line

<table>
<thead>
<tr>
<th>Application #</th>
<th>Date received</th>
<th>Date submitted</th>
<th>Application Issued</th>
<th>Plans returned</th>
<th>Permit Issued</th>
<th>MEPA required</th>
<th>EIR</th>
<th>EOECA Cert</th>
<th>Stormwater</th>
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APPLICATION FOR CONSTRUCTION & ASSOCIATED ACCESS PERMIT TO DCR PARK LANDS & ROADWAYS

GENERAL INFORMATION
M.G.L. C.132A§7, C.92§33, 801CMR11.06 and all other enabling powers grant DCR the authority to issue Construction and Access Permits. Access is defined as:
I. Use by motor vehicles and/or construction equipment entry and/or exit to any DCR property including roads, parkways, parklands, structures and/or facility from abutting properties.
II. Any physical work (i.e. curb cuts, trench work, street openings) performed on under and or within DCR owned land including parklands, reservations, roadways, parkways...

APPLICATION, MITIGATION AND/OR RESTORATION FEES
The non refundable $50 Administrative Application Fee shall accompany this form. All check shall be payable to the Massachusetts, Department of Conservation and Recreation.

Include a minimum of 3 existing conditions photographs, taken from 3 or 4 angles, a focus plan of the area and a sketch which indicates lot size, DCR parkway frontage, proposed work location and details, property lines, building location(s), related to proposed physical work with respect to DCR Property baseline. Traffic Management Plan in accordance with current Federal Highway Administration MUTCD requirements. All documents should be relevant to the work on DCR properties/issues: If off the point information documents are included in the application package please clearly mark ALL relative information.

III. Application for all non-residential and residential developments greater than 5 units must include engineered access plans (minimum of 4 copies) at an appropriate scale (1 inch = 20 or 40 feet) which clearly show all proposed work and:
- DCR Property Layout line and baseline
- Location and dimensions of proposed work
- Location of existing structures, trees, and utilities
- Complete details of existing and proposed drainage.
- Information on over weight equipment and routes to access site

Please note: activities such as camping, or DCR park facilities use require a reservation, work related to Dam Safety and Water Supply issues are permitted by those sections, please see DCR web site at:
http://www.mass.gov/dcr/

SPECIAL INSTRUCTIONS (PRINT OR TYPE)

LINE 1 PROJECT LOCATION: Name the DCR property or properties; Park and/or Parkway, plus specific location and municipality the access and/or construction is sought, address of work site.
LINE 2 PROJECT DESCRIPTION: Description of work to be done; Type of access sought, briefly describe facility for which access is sought.
Owner/Ship planning by project lines
EXAMPLE 1: Single family residential driveway at DCR Parkway (80' north of the intersection of X road) proposed drive frontage will be 12' wide.
EXAMPLE 2: 500,000 s.f. shopping mall off of DCR XX parkway and Route XYZ in Anytown MA, bordering XXX Park; roadway geometry modified to accommodate left-turn lane, relocation of lights, traffic signals, remove and replace 15 mature trees, installation of drainage, & utilities (see plans, Environmental, Conservation Commission, MA Historical permits, Fish and Wildlife).

LINE 3 PROJECT IMPLEMENTATION AND EFFECTS: Include DCR PROPERTY IMPACTS:
- TEMPORARY IMPACTS + how they will be rectified
- PERMANENT IMPACTS – how they will be minimized
- ENVIRONMENTAL IMPACTS (including copies of permits)
- FLORA AND FAUNA IMPACTS and replacement plan

Short explanation of the need for the permit
Short description of the whole construction project
Specific details on all components, phases, construction schedule and Timelines that will directly impact DCR property.
Details on components of the job that will indirectly impact DCR property
Details on the project benefit to DCR, the public, and/or the community
(Attach additional sheets if necessary).

MITIGATION (note Access and Excavation Fees will be charged; Mitigation in the form of improvement to the Project area may not amount to less than the total of the access and excavation fees)
EXAMPLE 1: Remove 50 ft of existing granite curb on south side of Property to construct driveway access & modify the roadway geometry to accommodate left-turn lane. Three day project starting July 1, 20XX
EXAMPLE 2: Excavate 10 x 10 ft section of roadway at Station 100+00 in westbound lanes in order to install residential water service to 100 DCR Parkway on heavily traveled roadway therefore permittee will provide 2 police details and use 4 days: plus additional signage.

LINE 4 TIME FRAMES: Planning, Design and Construction
LINE 5 USAGE AREA: DCR property usage size (length and width) including excavation dimensions, sizes of components installed.
For projects with permanent installation: O&M requirements, duration and financial responsibility.

LINE 6: DCR RESTRICTED ROADWAYS ACCESS
LINE 7: MATERIAL TRANSPORTATION
LINE 8: TRAFFIC MANAGEMENT for motor vehicles, pedestrians, and bicycles in accordance with the most recent MUTCD
Submit a full size (24"x36") plan(s) certified by a Traffic Engineer or Traffic Control Technician.
1. Detours for motor vehicles, pedestrians, and bicycles.
2. Logistics and effects on procurement, maintenance, and transportation ...
   a. Items of concern – i.e. schools, playgrounds, handicapped children, and elderly housing
LINE 9: DIG SAFE # must be obtained by calling 1-888-DIG-SAFE.
LINE 10: OTHER PERMIT & LICENSES: List all permits, including application dates and status; enclose 1 copies of each application/permit. Including DCR permits issued for this work location.
LINE 11 & 12: Contact information for the applicant and/or their contractors. Proponent, Owner, Permittee name(s) must be the name of the person or entity responsible for funding the construction and/or the property or facility owner (other than DCR), for the construction activity being permitted: NOT an agent. Contact may be the owner's agent and may be an additional signatory.
Individual or business making application must complete the required information, including date of application and signature
- Contact names and business title(s)
- Addresses (location and E-mail)
- Phone numbers (office, cell, and fax)
- Name and title of the individual who will accept permit conditions for the permittee

RETURN COMPLETED PERMIT APPLICATION ALONG WITH FEE TO:
Director of Permits
Department of Conservation and Recreation (DCR)*
PERMIT SECTION, 251 Causeway Street, 7th Floor,
Boston, MA 02114

Instruction for completing application for DCR Construction Permit
Legend

Water Service To Be Replaced

- 1022 Furnace Brook Parkway

City of Quincy, Massachusetts, Weston & Sampson

CITY OF QUINCY, MASSACHUSETTS
LEAD SERVICE LINE REPLACEMENT PROJECT

LOCUS MAP

City of Quincy, Massachusetts, Weston & Sampson

Legend

Water Service To Be Replaced

- 1022 Furnace Brook Parkway

City of Quincy, Massachusetts, Weston & Sampson
November 23, 2016

Mr. Kevin McKenna
Massachusetts Water Resources Authority
Wastewater 8(m) Permitting Unit
Chelsea Facility
2 Griffin Way
Chelsea, MA 02150

Re: MWRA Waste Water 8(m) Permit Application
   Lead Service Line Replacement Program, Quincy, Massachusetts

Dear Mr. McKenna:

On behalf of the City of Quincy Department of Public Works, Weston & Sampson Engineers, Inc. is submitting the enclosed 8(m) permit application, details, and specifications for two (2) water service replacements at 98 Putnam Street and 31 Thomas Burgin Parkway.

The proposed water service replacements and appurtenant work will be installed perpendicular to and will cross over the existing MWRA infrastructure. The proposed services will be installed with approximately 5-feet of cover, maintaining a minimum distance of 8 feet between the bottom of the water service and the top of the MWRA utilities.

The water services at 98 Putnam Street and 31 Thomas Burgin Parkway will be replaced as part of a city wide water service replacement project, which will be publicly bid this winter. Construction is expected to start in April 2017 and will conclude in September 2017. Once a contractor has been selected and a progress schedule has been submitted, the MWRA will be informed of the approximate start date of construction at each location. Each water service replacement is expected to be completed within one day, exclusive of permanent paving.

Please do not hesitate to contact me at (508) 698-3034 ext. 2352 if you require additional information or have any questions or comments.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.

Michael D. Warner, P.E.
Project Manager

Enclosures

cc: Mr. Paul Della Barba, City of Quincy

O:\Quincy MA|Lead Service Replacement Program 2160625|Permits\MWRA 8(m)\MWRA - Wastewater Cover Letter.docx
What is this application and why is it necessary?

This application, when completed and submitted, requests the MWRA to issue an 8(m) Permit. Section 8(m) of chapter 372 of the Acts of 1984 enables the Authority to issue permits to other entities to build, construct, excavate, or cross within an easement or other property interest held by the Authority.

How to complete and submit this application?

Please print legibly in black or dark blue ink or type all responses. Answer all questions: if a question does not apply to your project, write “Not Applicable” or “N/A”. Include all necessary documents. Keep a copy of the completed application for your records.

Send a $100.00 non-refundable check for the administrative processing fee, the original and five (5) copies of the completed application and any other required documents to either:

Massachusetts Water Resources Authority
Wastewater 8(m) Permitting Unit
2 Griffin Way
Chelsea, MA 02150
Attn: Kevin McKenna

Or
Massachusetts Water Resources Authority
Waterworks 8(m) Permitting Unit
2 Griffin Way
Chelsea, MA 02150
Attn: Ralph A. Francescom

Permit Process:
- The owner of the work, project, property or facilities that are resulting in the need for this 8m permit must be the party signing the permit application (not the project contractor or consultant).
- MWRA staff will review the application to determine if your request can be approved. If MWRA cannot issue the requested permit, you will receive a letter explaining the reasons for denying the request.
- If the permit application is approved, MWRA staff will send you three original 8(m) Permits for your signature. Additionally, a completed 8(m) Permit Assessment Fee Form noting any additional charges beyond the administrative processing fee (if required) will be sent.
- Upon receipt of all signed originals and payment for any additional fees, MWRA will execute the document.
- MWRA will mail the executed documents with a Notice to Proceed.
- All plans submitted shall be stamped by a Professional Engineer or Professional Land Surveyor licensed in the State of Massachusetts.

Questions and answers:
For answers to questions about this application and MWRA’s 8(m) Permits, contact MWRA’s Wastewater 8(m) Permitting Unit at (617) 305-5956 or MWRA’s Waterworks 8(m) Permitting Unit at (617) 305-5827.
MASSACHUSETTS WATER RESOURCES AUTHORITY
APPLICATION FOR 8(m) PERMIT

1. **Applicant Owner Permit Issued To (Town or City, Utility Co. Owner of Property)**

   Name: Daniel Raymondi, DPW Commissioner, City of Quincy, Massachusetts

   Mailing Address: 55 Sea Street, Quincy, MA 02169

   Telephone (include area code): 617-376-1959

   Fax (include area code):

2. **Person to contact about this application (if other than the applicant):**

   Name: Michael Warner, PE – Weston & Sampson

   Mailing Address: 100 Foxborough Blvd, Suite 250, Foxboro, MA 02035

   Telephone (include area code): 978-977-0110 ext. 2352

   Fax (include area code):

3. **Location of the proposed work:**

   Street Address: 98 Putnam Street & 31 Thomas Burgin Parkway

   City/Town: Quincy, Massachusetts

   MWRA sewer line or waterline, section, nearest manhole:
   Sta. 4+50, High Level Sewer, 30-inch CI force main (Putnam Street)
   Sta. 9+00, Section 52, High Level Sewer (Thomas Burgin Parkway)

   Deed Book and Page or Land Court Certificate (if known):

4. **Brief description of work to be performed:** Water service line replacements within proximity to known MWRA Sewer infrastructure. Only the water services are to be replaced and a minimum vertical offset of 18-inches between the service and MWRA infrastructure will be maintained at all times. We anticipate the water services will be installed over MWRA infrastructure and the existing 10-feet clearance between the water service and sewer main will be maintained. Each replacement is expected to be completed in one day (two days total) with minimal excavation. Trench paving will follow and will be completed within one day. Once a contractor is selected, a construction schedule will be submitted to the MWRA.

   Approximate Start Date: Spring 2017   Estimated Completion Date: Fall 2017
5. Permits other than MWRA 8(m) Permit that need to be obtained before work can commence:

MWRA Water Works 8(m) — Permit application has been submitted to Ralph Francesconi

Please attach available plans and specifications of work to be performed and any other information that would be helpful in reviewing this application.

6. Applicant Certification:

I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Applicant’s Signature: __________________________ Date: 11/22/16

Print the name of the person whose signature is above: Daniel Raymondi

Corporate Title (if any): DPW Commissioner, City of Quincy
**Legend**

- Water Services To Be Replaced
- Replacement Locations

**CITY OF QUINCY, MASSACHUSETTS**

**LEAD SERVICE LINE REPLACEMENT PROJECT**

**LOCUS MAP**
November 23, 2016

Mr. Ralph A. Francesconi  
Massachusetts Water Resources Authority  
Water Works 8(m) Permitting Unit  
Chelsea Facility  
2 Griffin Way  
Chelsea, MA 02150

Re: MWRA Water Works 8(m) Permit Application  
Lead Service Line Replacement Program, Quincy, Massachusetts

Dear Mr. Francesconi:

On behalf of the City of Quincy Department of Public Works, Weston & Sampson Engineers, Inc. is submitting the enclosed 8(m) permit application, details, and specifications for a water service replacement at 1022 Furnace Brook Parkway.

The proposed water service replacement and appurtenant work will take place in the sidewalk, outside of roadway, and is not expected cross or impact the existing MWRA infrastructure at any time. The proposed service will be installed with approximately 5-feet of cover.

The water service at 1022 Furnace Brook Parkway will be replaced as part of a city wide water service replacement project, which will be publicly bid this winter. Construction is expected to start in April 2017 and conclude in September 2017. Once a contractor has been selected and a progress schedule has been submitted, the MWRA will be informed of the approximate start date of construction. The proposed work is expected to be completed within one day, exclusive of permanent paving.

Please do not hesitate to contact me with any questions or comments at (508) 698-3034 ext. 2352. If you should have any questions or require additional information, please contact me.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.

Michael D. Warner, P.E.  
Project Manager

Enclosures

cc: Mr. Paul Della Barba

O:\Quincy MA\Lead Service Replacement Program 2160625\Permits\MWRA 8(m)\Phase 1\Water\MWRA - Wastewater Cover Letter.docx
MASSACHUSETTS WATER RESOURCES AUTHORITY
APPLICATION FOR 8(m) PERMIT

What is this application and why is it necessary?

This application, when completed and submitted, requests the MWRA to issue an 8(m) Permit. Section 8(m) of chapter 372 of the Acts of 1984 enables the Authority to issue permits to other entities to build, construct, excavate, or cross within an easement or other property interest held by the Authority.

How to complete and submit this application?

Please print legibly in black or dark blue ink or type all responses. Answer all questions: if a question does not apply to your project, write “Not Applicable” or “N/A”. Include all necessary documents. Keep a copy of the completed application for your records.

Send a $100.00 non-refundable check for the administrative processing fee, the original and five (5) copies of the completed application and any other required documents to either:

Massachusetts Water Resources Authority
Wastewater 8(m) Permitting Unit
2 Griffin Way
Chelsea, MA 02150
Attn: Kevin McKenna

Or:

Massachusetts Water Resources Authority
Waterworks 8(m) Permitting Unit
2 Griffin Way
Chelsea, MA 02150
Attn: Ralph A. Francesconi

Permit Process:

- The owner of the work, project, property or facilities that are resulting in the need for this 8m permit must be the party signing the permit application (not the project contractor or consultant).
- MWRA staff will review the application to determine if your request can be approved. If MWRA cannot issue the requested permit, you will receive a letter explaining the reasons for denying the request.
- If the permit application is approved, MWRA staff will send you three original 8(m) Permits for your signature. Additionally, a completed 8(m) Permit Assessment Fee Form noting any additional charges beyond the administrative processing fee (if required) will be sent.
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- MWRA will mail the executed documents with a Notice to Proceed.
- All plans submitted shall be stamped by a Professional Engineer or Professional Land Surveyor licensed in the State of Massachusetts.

Questions and answers:

For answers to questions about this application and MWRA 8(m) Permits, contact MWRA’s Wastewater 8(m) Permitting Unit at (617) 305-5956 or MWRA’s Waterworks 8(m) Permitting Unit at (617) 305-5827.
MASSACHUSETTS WATER RESOURCES AUTHORITY
APPLICATION FOR 8(m) PERMIT

1. Applicant Owner Permit Issued To (Town or City, Utility Co. Owner of Property)

Name: Daniel Raymondi, DPW Commissioner, City of Quincy, Massachusetts

Mailing Address:  55 Sea Street, Quincy, MA 02169

Telephone (include area code): 617-376-1959

Fax (include area code):

2. Person to contact about this application (if other than the applicant):

Name: Michael Warner, PE – Weston & Sampson

Mailing Address: 100 Foxborough Blvd. Suite 250, Foxboro, MA 02035

Telephone (include area code): 978-977-0110 ext. 2352

Fax (include area code):

3. Location of the proposed work:

Street Address: 1022 Furnace Brook Parkway

City/Town: Quincy, Massachusetts

MWRA sewer line or waterline, section, nearest manhole: 48” steel water main, Sec. 22, Sta. 189+75

Deed Book and Page or Land Court Certificate (if known):

4. Brief description of work to be performed: Water service line replacement within proximity to known MWRA water infrastructure (Section 22). Only the water service is to be replaced, which is connected to the City’s water main located within the sidewalk of the eastern side of the street. Based off of records received from the MWRA, the Authority’s water main is located on the opposite side of Furnace Brook Parkway and should not be impacted by the proposed water service replacement. If there are utility conflicts, the water service will be installed over the existing MWRA water main and the required minimum vertical offset of 18-inches, between the water service and MWRA infrastructure will be maintained. The water service replacement is expected to be completed in one day with minimal excavation. Trench paving will follow and will be completed within one day. Once a contractor is selected, a construction schedule will be submitted to the MWRA.

Approximate Start Date: Spring 2017  Estimated Completion Date: Fall 2017
5. **Permits other than MWRA 8(m) Permit that need to be obtained before work can commence:**

MWRA Waste Water 8(m) – Permit application has been submitted to Kevin McKenna

Please attach available plans and specifications of work to be performed and any other information that would be helpful in reviewing this application.

6. **Applicant Certification:**

I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Applicant’s Signature: [Signature]  
Date: 11/22/16

Print the name of the person whose signature is above: Daniel Raymondi

Corporate Title (if any): DPW Commissioner, City of Quincy
Legend

Water Service To Be Replaced

- 1022 Furnace Brook Parkway
PART 1 – GENERAL

1.01 WORK INCLUDED:

A. The scope of work includes the removal and replacement of approximately 130 lead water services in the right-of-way, non-private and private property and includes all work as described in these specifications. Portions of this work will occur in close proximity to and will cross existing MWRA water and sewer mains and occur in DCR owned right-of-ways. All work will need to be constructed in accordance with the appropriate permit regulations and these specifications.

B. The Contractor shall be responsible for scheduling its activities and the activities of any subcontractors involved, to meet the completion date, or milestones, established for the contract. Scheduling of the work shall be coordinated with the Owner and Engineer on a weekly basis.

C. The Contract shall be responsible for scheduling a minimum of two (2) appointments with the Property Owner, as detailed herein.

1.02 RELATED WORK:

A. SECTION 00890 – PERMITS

B. SECTION 01110 – CONTROL OF WORK AND MATERIALS

C. SECTION 01140 – SPECIAL PROVISIONS

D. SECTION 02515 – SERVICE CONNECTIONS

E. SECTION 15408 – PLUMBING

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 GENERAL:

A. The Contractor shall be responsible for scheduling its activities and the activities of any subcontractors involved, to meet the completion date, or milestones, established for the contract and listed in the enclosed permits. Scheduling of the work shall be coordinated with the Owner and Engineer.
B. Prior to performing any work at the site, the Contractor shall submit a detailed computer-generated schedule to the Engineer for review. The schedule shall include: construction activities, the submittal and approval of shop drawings, customer notices, the procurement of materials and equipment, installation, and testing along with start and end dates for each activity, estimated duration, and activity description.

C. The Contractor shall provide a Project Manager to oversee the water service replacement program. The Project Manager shall be thoroughly familiar with and experienced in municipal water service installation. The Project Manager shall have the authority to speak for and make decisions on behalf of the Contractor.

D. The Contractor shall employ a competent Superintendent or Foreman present at all times when work is in progress to receive orders and to perform work.

E. The Contractor shall designate a representative who will be available to respond to emergency calls by the Owner at any time day and night and on weekends and holidays should such a situation arise.

F. The Contractor shall make all appointments required to replace water meters. Appointments shall be made as specified below. The Contractor must be available from 7:00 AM to 8:00 PM, local time, Monday through Friday of each week, except holidays, to receive incoming requests for appointments. An automated answering service will not be acceptable.

G. The Contractor shall create and utilize a unique email address dedicated for use with this Contract. The email address shall not be utilized for any other project and shall be used for emailing with Property Owners and for Property Owners to email the Contractor with appointment requests for only this project.

H. No water service replacement work or restoration of private property will be allowed without written consent of and a signed Right of Entry by the Property Owner.

I. The Property Owner or representative of the Property Owner, aged 18 years or older, shall be present for all work performed on private property.

J. The Owner’s Lead and Copper Rule (LCR) primary and alternate sample sites shall not be replaced until after the Owner’s LCR sampling has been completed, unless otherwise stated by the Owner. LCR sampling is expected to be completed by September 1, 2017.

K. The Contractor shall be responsible for performing water service replacement work and private property restoration concurrently and will not be allowed to perform all water service replacements followed by all private property restoration. All appointment scheduling shall be coordinated with the Owner.
3.02 HOURS OF CONSTRUCTION ACTIVITY:

A. The Contractor shall conduct all construction activity relating to water service replacements between 7:00 a.m. and 5:00 p.m., Monday through Saturday. No construction work shall be allowed on Sundays or Holidays without written authorization from the Owner. No claim for additional payment shall be permitted if the Contractor is authorized to work on Sundays, or Holidays.

B. The Owner will provide personnel for assistance in locating and operating water services, valves, and other of its utilities at no cost to the Contractor during the Owner’s normal working hours (Monday through Friday 8:00 a.m. to 3:00 p.m.). The Contractor shall provide the Owner with a minimum of 72-hours, three (3) business days, notice. When this assistance is required by the Contractor outside of the Owner’s normal working hours the cost will be incurred by the Contractor at the prevailing overtime rate of pay for the personnel providing the assistance. The Owner will bill the Contractor directly.

3.03 CONTRACTOR PERSONNEL AND IDENTIFICATION:

A. All potential employees shall complete pre-employment drug and alcohol screening tests. A Massachusetts Criminal Offender Record Information (CORI) pertaining to conviction and pending criminal data shall be obtained by the Contractor for all potential employees who have the potential for unmonitored access to persons in their homes. The Contractor is responsible for getting certified by the Massachusetts Criminal History Systems Board (CHSB), if required. If the employee is not a resident of Massachusetts an equivalent criminal background check will be conducted in the employee’s state of residence in addition to the Massachusetts CORI. The Contractor shall certify that these pre-employment screenings have been conducted, but the Owner shall not view the results. The costs associated with coordinating and conducting pre-employment drug and alcohol screening tests and criminal MA CORI background checks of potential employees shall be the responsibility of the Contractor. The drug and alcohol screening and MA CORI checks must be completed prior to a potential employee starting work.

B. The Contractor shall provide a list of personnel assigned to the project inclusive of chain of command rankings to the Quincy Police Department allowing them to do additional background checks. This list must be provided prior to commencement of any work performed on the project site. The Contractor shall maintain this list and notify the Engineer and the Owner of any revisions throughout the duration of the work. The Contractor shall not adjust the list of personnel or increase the number of construction crews assigned to the work without providing one-week advance notice to the Engineer.

C. Only people who are technically competent and are of acceptable character and personality for work that entails unsupervised entry into individual facilities shall be hired.
D. All personnel assigned to the project by the Contractor shall wear an approved picture identification badge displayed in a conspicuous manner. Employees without proper identification will not be allowed to work. The identification badge shall display the Contractor's name, employee name, title and signature, employee's picture, and employee ID number. Employees who, for whatever reason, are no longer employed by the Contractor shall be required to return to the Contractor their identification material upon termination of employment.

1. All employees must be registered with the local Police Department(s) prior to working on the Contract.

2. All vehicles used by the Contractor shall display identification signs acceptable to the Owner at all times. The approved identification signs shall be on both sides of the vehicles.

E. Any reports of lack of courtesy or workmanship must be investigated by the Contractor within 24 hours or receiving the report. Contractor personnel must always be aware of being representatives of the Owner and behave accordingly. The Contractor shall not enter a facility without the permission or presence of an adult of age eighteen or older. The Contractor shall not accept payment for work performed during the service replacement. The Contractor shall not perform any work in the facility other than that necessary to complete the meter replacement. Under no circumstances is the Contractor, its employees or representatives to solicit additional business, plumbing or otherwise, from the Owner’s customers. Any inappropriate conduct will be grounds for termination of the Contract. The recommendation of a particular plumber or company and/or the performance of work other than the supply and installation of equipment included under this contract is prohibited.

F. Plumbers licensed in the Commonwealth of Massachusetts shall be required to perform necessary work downstream of the water meter. The Contractor shall obtain plumbing permits, as required by the Owner’s plumbing inspector.

3.04 CUSTOMER CONTACT AND APPOINTMENT SCHEDULING

A. The Owner shall provide the Contractor with an electronic list that indicates customer name, address, and replacement type (full or partial) for each of the service replacements to be installed under this Contract. The Owner shall provide the Contractor with the customer telephone numbers and email addresses, if on file in the Owner’s database, but the Contractor shall be responsible for obtaining telephone numbers and email addresses for other customers.

B. The Contractor is required to contact the individual, commercial, industrial, and/or municipal users for the purpose of gaining access to the facilities, structures, or private property.
C. The Contractor shall be responsible for scheduling and attending a minimum of two (2) appointments with the Property Owner. The first appointment shall be for the Contractor, Owner, and Engineer to access the water meter and area around the water meter to assess and document the existing conditions within the interior of the property, determine the feasibility of the proposed service replacement work, and coordinate the proposed work. The second appointment shall be for the Contractor to perform the proposed service replacement work and shall be made only after the building interior investigation has been performed. Additional appointments may be necessary for the Contractor to gain access to private property to repair and restore interior and exterior items to pre-construction conditions.

D. An initial mailing shall be made to all affected customers to inform them of the lead service replacement program, the procedure for scheduling appointments, and any other information required. A sample letter shall be submitted to the Owner and Engineer for approval prior to the initial mailing. The Contractor will be responsible for scheduling appointments for service replacements with the Property Owner. Service Replacement work shall be performed only within the work hours noted above, unless the Contractor receives written approval of exceptions by the Owner.

E. The Contractor shall make at least four (4) additional attempts to request that water customers call the Contractor for an appointment. The attempts shall be in the form of an additional letter, two (2) phone calls (one phone call during normal business hours and one phone call at night, between the hours of 5:00 PM and 8:00 PM), and one attempt at door-to-door canvassing. The Contractor is to document ALL of its attempts to complete the service replacements. All appointments for service replacements and all call-backs are the Contractor’s responsibility and no claim for additional payment shall be allowed.

F. It is expected that the Contractor may be able to proceed with some of the scheduling by door-to-door canvassing. The Contractor’s field personnel shall use the following procedures for door-to-door contact with customers.

- Attempt to contact customer by knocking on door, using door bell, or entering a commercial facility. Refrain from knocking on windows or entering backyards.
- If the customer is present, inform him/her of the lead service replacement program and attempt to assist the customer in calling the Contractor’s office to schedule an appointment. At no time shall a Contractor threaten any resident with termination of service or any other action for failure to consent to the replacement program.
- The Contractor shall not enter a residence or business without written permission, expressed consent, and the presence of a person of age eighteen (18) or older.
- If the customer is not present, the Contractor shall leave the approved notice in a visible location. The notice shall not be left in the mailbox.

G. If a "lockout" occurs as a result of the customer failing to contact the Contractor to set up an appointment, the Contractor shall make at least three visits: one visit on a weekday in
the AM; one visit on a weekday after 6:00 PM; and one visit on Saturday. A notice must be left after each attempted contact explaining the purpose of the contact, together with a telephone number where the Contractor may be reached. A sample of the notice shall be submitted to the Owner and Engineer for approval prior to the first visit. If after the eight (8) documented notification attempts, including a minimum of three (3) visits, the property will be added to the no-response list. The Contractor shall provide the Owner and Engineer with a complete listing of the no-response contacts on a monthly basis showing all documented attempts to contact the customer.

H. All service replacements shall be made at the convenience of the customer. The appointment for the installation shall be the responsibility of the Contractor. The Contractor shall supply a minimum of one dedicated telephone line and one dedicated email for customers to utilize to create an appointment, unique to this project. The Contractor may find that many customers are not accessible during normal working hours. The Contractor shall take this into account when preparing its bid and no claim for additional payment shall be allowed for work to replace water services performed outside of normal business hours.

I. The Contractor shall use a computerized tracking system that coordinates appointment scheduling and actual replacement totals. The system must be fully integrated with all phases of scheduling production, customer contact documentation, and accounting. The system must be able to generate weekly and monthly production status, exception lists, and refusal/no response list reports. The Contractor shall provide electronic copies of the reports to the Owner and Engineer on a weekly and monthly basis depending on the report. The final content and layout will be determined during construction. The weekly production reports shall be generated from an interactive database and contain, at a minimum, the following information (the database shall also provide fields to allow the entry of correcting information such as customer name):

- Customer name
- Address
- Telephone number
- Email address, if provided by the Customer
- Customer representative present for installation (if different from customer name)
- Date and time of replacement
- Installation notes (items installed, length of copper piping installed, etc.)
- Details on attempts to contact customer, including date, time, and medium (letter, telephone, etc)
- Existing non-private side water service line material (copper, Lead, etc.)
- Existing private side water service line material (copper, Lead)
- General location of the water service
- General location of curb stop
- Any new appurtenances required (corporation stop, curb stop, etc.)
- Any connections made within the residence.
L. In instances where the Contractor is going to be late to an appointment the Contractor shall notify the Owner and the homeowner by phone call, at a minimum hour (1) hour in advance of the appointment and attempt to reschedule the appointment with the homeowner.

M. Inability of the Contractor to adequately communicate with the Owner will not be a basis of claims against the Owner.

3.05 CONSTRUCTION SEQUENCING REQUIREMENTS:

A. The Contractor, upon arrival to an appointment shall briefly discuss the replacement process with the homeowner and shall notify the homeowner at least 15 minutes prior to the shutdown of the water service.

B. Excavation on private property cannot occur without the homeowner or homeowner’s representative, age eighteen years or older, present.

3.06 DOCUMENTATION:

A. In addition to the reports and files mentioned above, the Contractor shall be responsible for providing the Owner with photographs, as detailed below, and an inventory of these photographs listing the address and name of photograph.

B. The Contractor shall be responsible for taking a minimum of two photographs pre- construction of the existing service material.

- One of the excavation at the curb stop showing the curb stop and the pipe material on the non-private and private side of the curb stop.
- One of the excavation at the corporation stop (if required) showing the corporation stop and the material of the pipe between the corporation stop and the curb stop.

C. The Contractor shall take a minimum of three (3) pre-construction and three (3) post construction photographs of the exterior of the property, each from a different perspective:

- One from the perspective of the street where the property receives water service. (facing the building)
- One from the perspective of the building where the water service enters the property. (facing the street)
- One from the perspective of an abutter. (facing the building)

D. The Contractor shall take a minimum of three (3) pre construction and three (3) post construction photographs of the interior of the property, each from a different perspective:

- One showing where the water service enters the building to where it connects
to the meter.

- Two showing the general set up of the water service in relation to the rest of the building interior, one showing the meter and upstream piping and one showing the meter and downstream piping.

E. All photographs shall be taken with a digital camera and shall be time and date stamped. A board shall be used to indicate the customer name, service address, and service size and it shall be visible in all photos. Files shall be JPEG color images of six hundred (600) dpi quality or better. Photograph file names shall be uniquely identified and shall begin with the service address and followed by “Ex-Pre” for exterior, preconstruction, “Ex-Post” for exterior, post-construction, “Int-Pre” for interior, pre-construction, or “Int-Post” for interior, post-construction. The photographs shall be numbered appropriately to distinguish between each exterior and interior perspective. Street names shall be spelled out, such as road or street. Abbreviations will not be acceptable.

F. The Contractor shall submit an example CD or flash drive to the Engineer for approval within one (1) month of the start of the contract.

G. Photographs must be submitted weekly and all photographs must be received for the Contractor to receive payment for its work.

H. The Contractor shall submit monthly summary reports contained the above-listed information and listing which addresses have been installed, which addresses remain to be installed, and which addresses cannot be installed with reasons why. Reports shall be submitted electronically as Microsoft Excel files. Monthly summaries MUST be submitted for the Contractor to receive payment for his work.

3.07 EMERGENCY CONTACT

A. The Owner shall investigate defective installations resulting in service interruption or reduced quality of service or leaking settings. The Owner shall attempt to advise the Contractor within 90 minutes of notification, so that the Contractor has the option to investigate with the Owner. Depending on the severity of the emergency, the Owner may elect to make the repairs and may elect to back charge the Contractor for this work. If the Owner directs the Contractor to make the repairs, the problem shall be corrected by the Contractor within four (4) hours of notification. The Contractor must provide a reliable means for contact and must be available for emergency work twenty-four (24) hours per day, seven (7) days per week.

END OF SECTION
SECTION 01110
CONTROL OF WORK AND MATERIALS

PART 1 – GENERAL
Not Used.

PART 2 – PRODUCTS
Not Used

PART 3 - EXECUTION

3.01 HAULING, HANDLING AND STORAGE OF MATERIALS:

A. The Contractor shall, at its own expense, handle and haul all materials furnished by it and shall remove any of its surplus materials at the completion of the work.

B. The Contractor shall provide suitable and adequate storage for equipment and materials furnished by it that are liable to injury and shall be responsible for any loss of or damage to any equipment or materials by theft, breakage, or otherwise.

C. All excavated materials and equipment to be incorporated in the Work shall be placed so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the work. Materials and equipment shall be kept neatly piled and compactly stored in such location as will cause a minimum of inconvenience to public travel and adjoining owners, tenants and occupants.

D. The Contractor shall be responsible for all damages to the work under construction during its progress and until final completion and acceptance even though partial payments have been made under the Contract.

3.02 OPEN EXCAVATIONS:

A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons, and damage to property. The Contractor shall, at its own expense, provide suitable and safe means for completely covering all open excavations and for accommodating travel when work is not in progress.

C. The length of open trench will be controlled by the particular surrounding conditions but shall always be confined to the limits prescribed by the Engineer.
D. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, then special construction procedures shall be taken, such as limiting the length of trench and prohibiting stocking excavated material in the street.

E. All street excavations shall be completely closed at the end of each work day. Backfilling or use of steel plates of adequate strength to carry traffic shall be used.

3.03 MAINTENANCE OF TRAFFIC:

A. Unless permission to close the street is received in writing from the proper authority, all excavated materials and equipment shall be placed so that vehicular and pedestrian traffic may be safely maintained at all times.

B. Should the Chief of Police deem it necessary, uniformed officers will be assigned to direct traffic. The Contractor shall make all arrangements in obtaining uniformed officers required.

C. The Contractor shall at its own expense, as directed by the Police Traffic Control/Safety Officer, provide and erect acceptable barricades, barrier fences, traffic signs, and all other traffic devices not specifically covered in a bid item, to protect the work from traffic, pedestrians, and animals. The Contractor shall provide sufficient temporary lighting such as lanterns/flashers (electric battery operated) or other approved illuminated traffic signs and devices to afford adequate protection to the traveling public, at no additional cost to the Owner. See Section 01552 CONSTRUCTION ZONE SAFETY PLAN.

D. The Contractor shall furnish all construction signs that are deemed necessary by and in accordance with Part VI of the Manual on Uniform Traffic Control Devices as published by the U.S. Department of Transportation. In addition, the Contractor may be required to furnish up to 128 square feet of additional special construction warning signs. Size and exact wording of signs shall be determined by the Engineer during construction.

E. The intent of policing is to ensure public safety by direction of traffic. Police officers are not to serve as watchmen to protect the Contractor's equipment and materials.

F. Nothing contained herein shall be construed as reliving the Contractor of any of its responsibilities for protection of persons and property under the terms of the Contract.

3.04 CARE AND PROTECTION OF PROPERTY:

The Contractor shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be promptly restored by the Contractor, at its expense, to a condition similar or equal to that existing before the damage was done, to the satisfaction of the Engineer.
3.05 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES:

A. All existing buildings, utilities, pipes, poles, wires fences, curbies, property line markers and other structures which the Engineer decides must be preserved in place without being temporarily or permanently relocated, shall be carefully supported and protected from damage by the contractor. Should such property be damaged, it shall be restored by the Contractor, at no additional cost to the Owner.

B. The Contractor shall determine the location of all underground structures and utilities (including existing water services, drain lines, electrical lines, and sewers). Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by Contractor.

C. When fences interfere with the Contractor's operations, it shall remove and (unless otherwise specified) promptly restore them in accordance with Section 01564 EXISTING FENCES.

D. On paved surfaces the Contractor shall not use or operate tractors, bulldozers, or other power-operated equipment with treads or wheels which are shaped so as to cut or otherwise damage such surfaces.

E. All property damaged by the Contractor's operations shall be restored to a condition at least equal to that in which it was found immediately before work was begun. Suitable materials and methods shall be used for such restoration.

F. Restoration of existing property and structures shall be carried out as promptly as practicable and shall not be left until the end of the construction period.

3.06 MAINTENANCE OF FLOW:

A. The Contractor shall at its own cost, provide for the flow of sewers and drains interrupted during the progress of the work, and shall immediately cart away and dispose of all offensive matter. The entire procedure of maintaining existing flow shall be fully discussed with the Engineer well in advance of the interruption of any flow.

B. All existing drainage facilities including, but not limited to; brooks, streams, canals, channels, ditches, culverts, catch basins and drainage piping shall be adequately safeguarded so as not to impede drainage or to cause siltation of downstream areas in any manner whatsoever. If the Contractor damages or impairs any of the aforesaid drainage facilities, it shall repair the same within the same day.

C. At the conclusion of the work, the Contractor shall remove all silt in drainage structures caused by its operations as described in Section 01740, CLEANING UP.
3.07 REJECTED MATERIALS AND DEFECTIVE WORK:

A. Materials furnished by the Contractor and condemned by the Engineer as unsuitable or not in conformity with the specifications shall forthwith be removed from the work by the Contractor, and shall not be made use of elsewhere in the work.

B. Any errors, defects or omissions in the execution of the work or in the materials furnished by the Contractor, even though they may have been passed or overlooked or have appeared after the completion of the work, discovered at any time before the final payment is made hereunder, shall be forthwith rectified and made good by and at the expense of the Contractor and in a manner satisfactory to the Engineer.

C. The Contractor shall reimburse the Owner for any expense, losses or damages incurred in consequence of any defect, error, omission or act of the Contractor or its employees, as determined by the Engineer, occurring previous to the final payment.

3.08 SANITARY REGULATIONS:

Sanitary conveniences for the use of all persons employed on the work, properly screened from public observation, shall be provided in sufficient numbers in such manner and at such locations as may be approved. The contents shall be removed and disposed of in a satisfactory manner as the occasion requires. The Contractor shall rigorously prohibit the committing of nuisances within, on or about the work. Any employees found violating these provisions shall be discharged and not again employed on the work without the written consent of the Engineer. The sanitary conveniences specified above shall be the obligation and responsibility of the Contractor.

3.09 SAFETY AND HEALTH REGULATIONS:

This project is subject to the Safety and Health regulations of the U.S. Department of Labor set forth in 29 CFR, Part 1926, and to the Massachusetts Department of Labor and Industries, Division of Industrial Safety "Rules and Regulations for the Prevention of Accidents in Construction Operations (454 CMR 10.0 et. seq.)." The Contractor shall be familiar with the requirements of these regulations.

3.10 SITE INVESTIGATION:

The Contractor acknowledges that it has satisfied itself as to the conditions existing at the site of the work, the type of equipment required to perform this work, the quality and quantity of the materials furnished insofar as this information is reasonably ascertainable from an inspection of the site, as well as from information presented by the drawings and specifications made a part of this contract. Any failure of the Contractor to acquaint itself with available information will not relieve it from the responsibility for estimating properly the difficulty or cost of successfully performing the work. The Owner assumes no responsibility for any conclusion or interpretation made by the Contractor on the basis of the information made available by the Owner.
3.11 HAZARDOUS WASTE:

Should the Contractor, while performing work under this contract, uncover hazardous materials, as defined in Massachusetts Hazardous Waste Regulations 310 CMR 30.00, he shall immediately notify the Engineer. The Contractor is not, and has no authority to act as, a handler, generator, operator or disposer of hazardous or toxic substances found or identified at the site, and the Owner shall undertake all such functions.

END OF SECTION
PART 1 - GENERAL

Not used

PART 2 - PRODUCTS

Not used

PART 3 - EXECUTION

3.01 WATER FOR CONSTRUCTION PURPOSES:

A. In locations where water is in sufficient supply, the Contractor may be allowed to use water without charge for jetting backfill and other construction purposes. The express approval of the Owner shall be obtained before water is used. Waste of water by the Contractor shall be sufficient cause for withdrawing the privilege of unrestricted use.

B. If no water is available, the Contractor shall supply water at no additional cost to the Owner.

3.02 PIPE LOCATION:

Pipe shall be located substantially as indicated by Dig Safe. The Owner reserves the right, acting through the Engineer, to make such modifications as may be deemed desirable to avoid interference with existing structures or for other reasons.

3.03 OCCUPYING PRIVATE PROPERTY:

The Contractor shall not enter upon nor occupy with men, equipment or materials any property outside of the public highways or Owner’s easements, except with the written consent of the property owner or property owner’s agent.

3.04 EXISTING UTILITY LOCATIONS – CONTRACTOR’S RESPONSIBILITY:

A. The Contractor shall be responsible for having all utility companies locate their respective utilities on the ground prior to excavating.

B. To satisfy the requirements of Massachusetts law, Chapter 82, Section 40 and MWRA Permitting Department, Field Operations at (617) 305-5956, the Contractor shall, at least 72 hours, exclusive of Saturdays, Sundays and holidays, prior to excavation in the proximity of telephone, gas, cable television and electric utilities, notify the utilities concerned by calling “DIG SAFE” at telephone number: 1-888-344-7233.
C. The Contractor shall coordinate all work involving utilities and shall satisfy itself as to the existing conditions of the areas in which it is to perform his work. It shall conduct and arrange its work so as not to impede or interfere with the work of other contractors working in the same or adjacent areas.

3.05 COORDINATION OF WORK:

The General Contractor shall be responsible for coordinating its own work as well as that of any subcontractors. It shall be responsible for notification of the Engineer when each phase of work is expected to begin and the approximate completion date.

3.06 TIME FOR COMPLETION OF CONTRACT:

The time for completion of this contract is stipulated in the Form of General Bid. The Bidder shall base its bid on completing the proposed work by the completion date stipulated in Section 00300, FORM OF GENERAL BID.

3.07 MAINTENANCE OF TRENCH SURFACE:

After backfilling and compacting the trench, the Contractor shall be responsible for keeping the ground surface dry and passable at all times until the surface has been restored to original conditions.

3.08 COMPLIANCE WITH PERMITS:

A. The Contractor shall perform all work in conformance with requirements of the Permits, which appear in Section 00890 – PERMITS.

3.09 CUTTING, FITTING AND PATCHING:

A. The Contractor shall do all cutting, fitting, or patching of its work that may be required to make its several parts come together properly and fit it to receive or be received by work of other Contractors, as shown upon or reasonably implied by the drawings and the specifications for the completed structure, including all existing work.

B. The Contractor shall not endanger any work by cutting, digging, or otherwise and shall not cut or alter the work of any other Contractor, save with the consent of the Engineer.

C. All holes or openings required to be made in new or existing work, particularly at pipe, conduit, or other penetrations not covered by escutcheons or plates shall be neatly patched. All such holes shall be made completely watertight as approved by the Engineer.

D. Workmanship and materials of patching and repair work shall match the adjacent similar work and shall conform to the applicable sections of the specification. Patches and joints with existing work shall provide, as applicable in each case, visual, structural, and waterproofing continuity.
3.10 CONNECTIONS TO EXISTING WATER SYSTEMS:

A. The Owner will, upon 72-hours’ notice (excluding weekends and holidays) from the Contractor, assist the Contractor by locating and opening or closing any and all valves required for draining or admitting water to the various sections of the water main as required to perform the proposed work. No damages shall be claimed by the Contractor for delays in dewatering pipelines nor shall any damages be claimed because of water leaking through closed valves after dewatering is completed.

B. Connections to the existing distribution system shall be made with the mains under pressure unless the lines can be temporarily taken out of service as approved by the Owner.

C. The Contractor will be required to make test excavations to ascertain that the proposed position of the connections will be clear of joints, fittings, or other obstructions.

D. If any failure occurs in connection to existing mains, service shall be restored in the shortest possible time, the Contractor working around the clock, if necessary. The Contractor shall cooperate with the Owner in notifying the consumers or supplying emergency water. If required by Owner, the Contractor shall make connections to water mains during night hours, on Sunday or at other times of off-peak demand for water.

3.11 MASSACHUSETTS DATA SECURITY REGULATIONS:

The Contractor is required to comply with data security regulations contained in 201 CMR 17.00 that have been established to safeguard personal information of Massachusetts residents contained in paper or electronic records. The Contractor shall not submit to the Engineer or Owner documents in paper or electronic form that contain personal information (person’s name combined with one or more of the following – Social Security Number, driver’s license number or state-issued identification card number, financial institution account number, or credit or debit card number). Any document submitted to the Engineer that violates this provision shall be returned to the Contractor and the Contractor shall remove personal information from the document prior to resubmitting it to the Engineer. The Contractor shall require each Subcontractor to also comply with the MA data security regulations insofar as they involve submittal of personal information to the Engineer and Owner.

END OF SECTION
PART 1 - GENERAL

1.01 WORK INCLUDED:

A. Price adjustments, as required by MGL Chapter 30, Section 38A, shall be implemented for this Project. Price adjustments, as enumerated in Part 3 of this specification, shall be made for the following items:

   Water and Sewer Projects
   
   - Diesel fuel and gasoline
   - Liquid asphalt
   - Portland cement contained in cast-in-place concrete

B. Price adjustments shall be made in accordance with the methodology adopted by the Massachusetts Department of Transportation in the following SPECIAL PROVISIONS documents, which are attached, but modified as contained herein:


C. Base and Period Prices used to calculate price adjustments shall be as published by the Massachusetts Department of Transportation as presented in Documents 00811 through 00814.

1.02 CONTRACTOR CREDIT TO OWNER SHOULD PRICES DECREASE:

A. Price adjustments will only be made if the variance between the base price and the period price is Five Percent (5%) or more.

B. In the instance where the period price is below the base price by 5% or more, then the Contractor shall credit the Owner the adjustment.

PART 2 - PRODUCTS

Not used

08/25/2016 01250-1
PART 3 - EXECUTION

3.01 DIESEL FUEL AND GASOLINE:

A. Price adjustments shall be determined based on documented quantities of diesel fuel and gasoline usage for site dedicated equipment. This methodology shall replace the price adjustment basis on fuel usage factors, as described within the Massachusetts Department of Transportation Document 00812.

B. All site dedicated equipment shall be approved by the Engineer for the calculation of any qualifying price adjustment. Prior to the start of work the Contractor shall submit to the Engineer a list of all dedicated equipment for the project. The Contractor shall forward updated submittals, as necessary, throughout the duration of the contract. Only that equipment included within the current approved list shall be considered eligible for calculating a price adjustment under this Section 01250.

C. The Contractor shall submit fuel delivery slips to the Engineer as a basis for calculating total diesel fuel and gasoline usage for site dedicated equipment. At a minimum, the delivery slips will include the name of the fuel delivery company, the date and location of fueling, the type of fuel, description of the fueled equipment and the quantity for each type of fuel delivered in gallons. Any slips not providing the minimum information shall not be included in the calculation of total diesel fuel and gasoline usage for price adjustment purposes.

3.02 LIQUID ASPHALT:

A. The “Period Price Method” shall be used to determine price adjustments. For projects utilizing reclaimed asphalt include Reclaimed Asphalt Pavement (RAP) Factor (0.0 to <1.0) in calculation of the total price adjustment. Otherwise, use RAP Factor = 1.0.

B. For bid items involving asphalt paving that are measured and paid on a linear foot basis, or some other basis besides tonnage, the number of tons shall be determined by the Engineer using compacted measure of thickness within the established payment limits.
C. Asphalt paving not separately measured for payment but rather included as an incidental component of work under a related bid item shall not be considered for price adjustment.

3.03 PORTLAND CEMENT AND CONCRETE:

A. The price adjustment applies to all projects contained herein in Section 1.01A.

B. Field Concrete used in water and sewer projects, typically used for thrust blocks and concrete encasement, shall not be considered for price adjustment. Cast-in-place concrete used on these projects will be included in the price adjustment determination.

END OF SECTION
ATTACHMENT FOR SECTION 01250 PRICE ADJUSTMENTS

MASSDOT DOCUMENTS 00811-00814
This provision applies to all projects using greater than 100 tons of hot mix asphalt (HMA) mixtures containing liquid asphalt cement as stipulated in the Notice to Contractors section of the bid documents.

The Price Adjustment will be based on the variance in price for the liquid asphalt component only from the Base Price to the Period Price. It shall not include transportation or other charges. This Price Adjustment will occur on a monthly basis.

**Base Price**
The Base Price of liquid asphalt on a project as listed in the Notice to Contractors section of the bid documents is a fixed price determined at the time of bid by the Department by using the same method as for the determination of the Period Price detailed below.

**Period Price**
Please note that, starting December 15, 2008, two sets of period prices will be posted each month on the MassHighway website at http://www.mhd.state.ma.us/. They will be labeled “New Asphalt Period Price Method” and “Old Asphalt Period Price Method”.

**New Asphalt Period Price Method**
The “New Asphalt Period Price Method” is for contracts bid after December 15, 2008 and will show the Period Price of liquid asphalt for each monthly period as determined by MassHighway using the average selling price per standard ton of PG64-28 paving grade (primary binder classification) asphalt, FOB manufacturer's terminal, as listed under the "East Coast Market - New England, Boston, Massachusetts area" section of the Poten & Partners, Inc. "Asphalt Weekly Monitor". This average selling price is listed in the issue having a publication date of the second Friday of the month and will be posted as the Period Price for that month. MassHighway will post this Period Price on this website within two (2) business days following their receipt of the relevant issue of the "Asphalt Weekly Monitor". Poten and Partners has granted MassHighway the right to publish this specific asphalt price information sourced from the Asphalt Weekly Monitor.

**Old Asphalt Period Price Method**
The “Old Asphalt Period Price Method” Period Price will be for contracts bid on or before December 15, 2008 and will contain liquid asphalt prices as determined by the old or previous method. These prices will continue to be posted on MassHighway’s website until all contracts using the “Old Asphalt Period Price Method” Period Price have been closed.

**New and Old Asphalt Period Price Methods**
The paragraphs below apply to both the New and the Old Asphalt Period Price Methods.

The Contract Price of the hot mix asphalt mixture will be paid under the respective item in the Contract. The price adjustment, as herein provided, upwards or downwards, will be made after the work has been performed, using the monthly period price for the month during which the work was performed.

The Price Adjustment applies only to the actual virgin liquid asphalt content in the mixture placed on the job in accordance with the Standard Specifications for Highways and Bridges, Division III, Section M3.11.03.

The Price Adjustment will be a separate payment item. It will be determined by multiplying the number of tons of hot mix asphalt mixtures placed during each monthly period times the liquid asphalt content percentage times the variance in price between Base Price and Period Price of liquid asphalt.

This Price Adjustment will be paid only if the variance from the Base Price is 5% or more for a monthly period. The complete adjustment will be paid in all cases with no deduction of the 5% from either upward or downward adjustments.
No Price Adjustment will be allowed beyond the Completion Date of this Contract, unless there is a Department-approved extension of time.

******* END OF DOCUMENT *******
This monthly fuel price adjustment is inserted in this contract because the national and worldwide energy situation has made the future cost of fuel unpredictable. This adjustment will provide for either additional compensation to the Contractor or repayment to the Commonwealth, depending on an increase or decrease in the average price of diesel fuel or gasoline.

This adjustment will be based on fuel usage factors for various items of work developed by the Highway Research Board in Circular 158, dated July 1974. These factors will be multiplied by the quantities of work done in each item during each monthly period and further multiplied by the variance in price from the Base Price to the Period Price.

The Base Price of Diesel Fuel and Gasoline will be the price as indicated in the Department’s web site (www.mhd.state.ma.us) for the month in which the contract was bid, which includes State Tax.

The Period Price will be the average of prices charged to the State, including State Tax for the bulk purchases made during each month.

This adjustment will be effected only if the variance from the Base Price is 5% or more for a monthly period. The complete adjustment will be paid in all cases with no deduction of the 5% from either upward or downward adjustments.

No adjustment will be paid for work done beyond the extended completion date of any contract.

Any adjustment (increase or decrease) to estimated quantities made to each item at the time of final payment will have the fuel price adjustment figured at the average period price for the entire term of the project for the difference of quantity.

The fuel price adjustment will apply only to the following items of work at the fuel factors shown:

<table>
<thead>
<tr>
<th>ITEMS COVERED</th>
<th>FUEL FACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diesel</td>
</tr>
<tr>
<td>Excavation: and Borrow Work: Items 120, 120.1, 121, 123, 124, 125, 127, 129.3, 140, 140.1, 141, 142, 143, 144., 150, 150.1, 151 and 151.1 (Both Factors used)</td>
<td>0.29 Gallons / CY.</td>
</tr>
<tr>
<td>Surfacing Work: All Items containing Hot Mix Asphalt</td>
<td>2.90 Gallons / Ton</td>
</tr>
</tbody>
</table>

****** END OF DOCUMENT ******
This provision applies to projects containing a price adjustment for structural steel and reinforcing steel as stipulated in the Notice to Contractors section of the Bid Documents. It applies to all structural steel as defined below and all reinforcing steel on the project. Compliance with this provision is mandatory, i.e., there are no “opt-in” or “opt-out” clauses. Price adjustments will be handled as described below and shall only apply to unfabricated structural steel material, consisting of rolled shapes, plate steel, sheet piling, pipe piles, steel castings and steel forgings, and unfabricated reinforcing steel bars.

Price adjustments will be variances between Base Prices and Period Prices. Base Prices and Period Prices are defined below.

Price adjustments will only be made if the variances between Base Prices and Period Prices are 5% or more. A variance can result in the Period Price being either higher or lower than the Base Price. Once the 5% threshold has been achieved, the adjustment will apply to the full variance between the Base Price and the Period Price.

Price adjustments will be calculated by multiplying the number of pounds of unfabricated structural steel material or unfabricated reinforcing steel bars subject to a price adjustment by the index factor calculated as shown below under Example of a Period Price Calculation.

Price adjustments will not include the costs of shop drawing preparation, handling, fabrication, coatings, transportation, storage, installation, profit, overhead, fuel costs, fuel surcharges, or other such charges not related to the cost of the unfabricated structural steel and unfabricated reinforcing steel.

The weight of steel subject to a price adjustment shall not exceed the final shipping weight of the fabricated part by more than 10%.
Base Prices and Period Prices are defined as follows:

*Base Prices* of unfabricated structural steel and unfabricated reinforcing steel on a project are fixed prices determined by the Department and found in the Notice to Contractors section of the Bid Documents.

The Base Price Date is the month and year in which MassDOT opened bids for the project. This date is used to select the Base Price Index.

*Period Prices* of unfabricated structural steel and unfabricated reinforcing steel on a project are variable prices calculated based on the purchase date of the steel (Period Price Date) using an index of steel prices to adjust the Base Price.

The Period Price Date is the date the steel was delivered to the fabricator as evidenced by an official bill of lading submitted to the Department containing a description of the shipped materials, weights of the shipped materials and the date of shipment. This date is used to select the Period Price Index.

The index used for the calculation of Period Prices is the U.S. Bureau of Labor Statistics (BLS) Producer Price Index (PPI) Series ID WPU101702 (Not Seasonally Adjusted, Group: Metals and Metal Products, Item: Semi-finished Steel Mill Products.) As this index is subject to revision for a period of up to four (4) months after its original publication, no price adjustments will be made until the index for the period is finalized, i.e., the index is no longer suffixed with a “(P)”.

Period Prices are determined as follows:

\[
\text{Period Price} = \text{Base Price} \times \text{Index Factor} \\
\text{Index Factor} = \frac{\text{Period Price Index}}{\text{Base Price Index}}
\]

Example of a Period Price Calculation:

Calculate the Period Price for December 2009 using a Base Price from March 2009 of $0.82/Pound for 1,000 Pounds of ASTM A709 (AASHTO M270) Grade A36 Structural Steel Plate.

The Period Price Date is December 2009. From the PPI website*, the Period Price Index = 218.0.

The Base Price Date is March 2009. From the PPI website*, the Base Price Index = 229.4.

\[
\text{Index Factor} = \frac{\text{Period Price Index}}{\text{Base Price Index}} = \frac{218.0}{229.4} = 0.950 \\
\text{Period Price} = \text{Base Price} \times \text{Index Factor} = $0.82/\text{Pound} \times 0.950 = $0.78/\text{Pound}
\]

Since $0.82 - $0.78 = $0.04 is less than 5% of $0.82, no price adjustment is required.
If the $0.04 difference shown above was greater than 5% of the Base Price, then the price adjustment would be 1,000 Pounds X $0.04/Pound = $40.00. Since the Period Price of $0.78/Pound is less than the Base Price of $0.82/Pound, indicating a drop in the price of steel between the bid and the delivery of material, a credit of $40.00 would be owed to MassDOT. When the Period Price is higher than the Base Price, the price adjustment is owed to the Contractor.

* To access the PPI website and obtain a Base Price Index or a Period Price Index, go to http://www.bls.gov/PPI/

END OF EXAMPLE.

The Contractor will be paid for unfabricated structural steel and unfabricated reinforcing steel under the respective contract pay items for all components constructed of either structural steel or reinforced Portland cement concrete under their respective Contract Pay Items.

Price adjustments, as herein provided for, will be paid separately as follows:

**Structural Steel**
Pay Item Number 999.449 for positive (+) pay adjustments (payments to the Contractor)

Pay Item Number 999.457 for negative (-) pay adjustments (credits to MassDOT Highway Division)

**Reinforcing Steel**
Pay Item Number 999.466 for positive (+) pay adjustments (payments to the Contractor)

Pay Item Number 999.467 for negative (-) pay adjustments (credits to MassDOT Highway Division)

No price adjustment will be made for price changes after the Contract Completion Date, unless the MassDOT Highway Division has approved an extension of Contract Time for the Contract.

************************************************************************

END OF DOCUMENT
SPECIAL PROVISIONS
PRICE ADJUSTMENT FOR PORTLAND CEMENT CONCRETE MIXES

January 12, 2009

This provision applies to all projects using greater than 100 Cubic Yards (76 Cubic Meters) of Portland cement concrete containing Portland cement as stipulated in the Notice to Contractors section of the Bid Documents. This Price Adjustment will occur on a monthly basis.

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 Base Price of Portland cement on a project is a fixed price determined at the time of bid by the Department by using the same method as for the determination of the Period Price (see below) and found in the Notice to Contractors.

The Period Price of Portland cement will be determined by using the latest published price, in dollars per ton (U.S.), for Portland cement (Type I) quoted for Boston, U.S.A. in the Construction Economics section of ENR Engineering News-Record magazine or at the ENR website http://www.enr.com under Construction Economics. The Period Price will be posted on the MassHighway website the Wednesday immediately following the publishing of the monthly price in ENR, which is normally the first week of the month.

The Contract Price of the Portland cement concrete mix will be paid under the respective item in the Contract. The price adjustment, as herein provided, upwards or downwards, will be made after the work has been performed, using the monthly period price for the month during which the work was performed.

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 Price Adjustment will be a separate payment item. It will be determined by multiplying the number of cubic yards of Portland cement concrete placed during each monthly period times the Portland cement content percentage times the variance in price between the Base Price and Period Price of Portland cement.

This Price Adjustment will be paid only if the variance from the Base Price is 5% or more for a monthly period. The complete adjustment will be paid in all cases with no deduction of the 5% from either upward or downward adjustments.

No Price Adjustment will be allowed beyond the Completion Date of this Contract, unless there is a Department-approved extension of time.

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*
END OF DOCUMENT
PART 1 - DESCRIPTION

1.01 GENERAL:

A. The following subsections describe the measurement of and payment for the work to be done under the items listed in Section 00300, FORM OF GENERAL BID.

B. All work performed as described in these contract documents shall be paid for under one or more of the items listed in Section 00300, FORM OF GENERAL BID. All other activities required in connection with performance of the work, including all work required under Division 1, GENERAL REQUIREMENTS, whether described in the contract documents or mandated by applicable codes, permits and laws, will not be separately paid for unless specifically provided for in the FORM OF GENERAL BID, but will be considered incidental to performance of the overall project.

C. Each unit or lump sum price stated in the Section 00300, FORM OF GENERAL BID shall constitute full compensation as herein specified for each item of work completed in accordance with specifications.

D. The payment items listed herein and in Section 00300, FORM OF GENERAL BID are intended to provide full payment for the work specified herein. Any work called for or implied in the documents but not listed as a payment item shall be considered incidental to the overall project.

E. Unless otherwise noted, all earthwork shall be included under any item requiring excavation. Unless otherwise noted, each item specified shall be furnished and installed in accordance with the technical section whether a specific applicable payment item exists or not.

F. The prices for those items which involve excavation shall include compensation for disposal of surplus excavated material, and installation of all necessary sheeting and bracing.

G. In all items involving excavation, the price shall be based on doing the entire excavation in earth. Where rock is excavated, the price therefor shall be in addition to the cost of excavating the earth, and no deduction shall be made in the amount for earth excavation.

H. MWRA funding can only be utilized for full replacement of lead service piping and will not be used to pay for replacing only a portion of the lead service piping. The City’s Water Enterprise Fund will be utilized to pay for the payment items when portions of a lead water service remain in use and are not replaced. The Contractor shall be responsible for tracking the bid item quantities for when the full lead water service is
replaced and when a portion of the lead water service is not replaced. One pay requisition shall be submitted with two bid quantity tracking spreadsheets for each funding source. Unless otherwise approved by the Engineer, the Contractor shall be responsible for replacing all portions of lead water services.

PART 2 – PAYMENT ITEMS

2.01 MOBILIZATION & DEMOBILIZATION:

A. Payment of the lump sum in the Bid Form for Item 1a shall be full compensation for the general mobilization and demobilization necessary to make the contract operational and shall include, but is not limited to, all insurance, bonds, tools/equipment, preparing and submitting permit applications required of the contract, Dig Safe coordination, catch basin protection, compost filter tubes, traffic control signage, photo documentation, background checks, CORI, SORI, and drug and alcohol screening, appointment scheduling requirements, water service inspection inside of buildings prior to excavation, project management, and all other work items described within these specifications as required for the project and not included for payment in other items listed herein.

B. The Contractor shall submit for approval by the Owner prior to the first payment application a lump sum breakdown detailing proposed drawdown of the lump sum over the contract duration. The lump sum cost for Item 1a shall not exceed 5% of the total cost for the Bid.

2.02 SERVICE CONNECTIONS:

A. Unless otherwise noted, the price for all service connections shall constitute full compensation for earth excavation, sheeting, dewatering, existing service material investigation, bedding, furnishing, laying, jointing, testing pipe, backfilling, sidewalk replacement, curbing replacement and/or resetting, water service installation documentation and photographs, loaming and seeding, and cleaning up.

B. Payment shall be made at the contract unit prices under the subdivisions of the item "Service Connections."

C. Service piping, including all types of copper tubing; brass and polypropylene pipe couplings; fittings; insulation; threaded brass fittings, adapters, nipples, bends, and reducers; new or reused meter couplings, setters, re-setters; and ball valves required to install the new water service complete, between the existing water main and the water meter in the house, as specified and detailed, shall be measured per linear foot completed.

D. Corporation stops, including saddles, fittings, and couplings if required, shall be measured per unit completed.

E. Curb stops, including couplings and fittings, if required, shall be measured per unit
completed. If required, excavating an access pit to expose and close the corporation stop shall not be separately paid for but shall be incidental to the cost of the curb stop.

F. Curb boxes shall be measured per unit furnished and installed.

G. Connections to non-copper pipe and connections to existing water meters shall not be separately measured for payment but shall be considered incidental to the cost of the Service Connection items.

2.03 SERVICE MATERIAL EXPLORATION EXCAVATION:

A. Only service replacement excavation that is aborted because the existing service is found to consist entirely of copper, brass, and/or iron (not lined with lead), and only as approved by the Engineer, shall be measured per excavation and shall be paid under the item “Service Material Exploration Excavation.”

B. Service material exploration excavation shall be paid at the contract unit price under the item “Service Material Exploration Excavation,” per excavation, and the unit price under this item shall constitute full compensation for all excavation, water service material investigation, backfill, in kind sidewalk replacement, in kind curbing replacement and/or resetting, surface restoration, loaming and seeding, or other work incidental to excavation, backfill, or restoration of the excavation.

C. The unit price under this item shall include a minimum 6-foot long excavation, measured perpendicular to the roadway, and enough exposure of the existing water service to enable the Engineer to determine the material of the water service on the private and non-private sides of the existing curb stop.

2.04 TEST PITS:

A. Test pits as ordered by the Engineer and not incidental to construction shall be measured per cubic yard excavated and backfilled under the Item “Test Pits.”

B. Test pits shall be paid at the contract unit price under the item “Test Pits.” The unit price under this item shall constitute full compensation for all excavation, backfill, pavement repair, in kind sidewalk replacement, in kind curbing replacement and/or resetting, surface restoration, loaming and seeding, or other work incidental to excavation, backfill, or restoration of test pits.

2.05 SEWER AND DRAIN RECONSTRUCTION:

A. Reconstruction of sewers and drains shall be measured per sewer or drain reconstructed and shall be paid at the contract unit price under the item "Sewer and Drain Reconstruction."

B. Only pipe which is not located for the Contractor in the field shall be considered for payment.
C. Pipes damaged by the Contractor which pass below the proposed pipeline or are outside the specified trench limits shall be repaired by the Contractor at no cost to the Owner.

2.06 ROCK EXCAVATION AND DISPOSAL:

A. Rock excavated and disposed of off-site by the Contractor shall be measured by the cubic yard, within the payment limits as defined in the water trench detail or as defined in Paragraph G below.

B. Payment for this item includes rock excavation and disposal; furnishing and installing gravel borrow in its place, and providing all required documentation.

C. Only boulders and concrete structures greater than one cubic yard shall be included for measurement and payment.

D. Where rock is encountered, it shall be uncovered but not excavated until the Engineer has made measurements, unless, in the opinion of the Engineer, satisfactory measurements can be made in some other manner.

E. The bidder shall include in the bid for items involving excavation, the cost of doing the entire excavation as earth. The price for the Item "Rock Excavation and Disposal" is intended to cover the difference between the cost of rock excavation and the cost of earth excavation.

F. The cost of pre-blast surveys, vibration air blast monitoring, blasting records and post-blast inspection shall be considered incidental to the cost of rock excavation and disposal and will not be separately paid.

G. When two or more pipes are installed parallel to one another and the trench payment limits overlap, rock excavation in the overlap section will only be paid once.

2.07 EARTHWORK:

A. Unless designated otherwise, earthwork shall not be separately measured for payment, but shall be considered incidental to construction of the project.

B. EXCAVATION AND BACKFILL OF UNSUITABLE MATERIAL ABOVE NORMAL GRADE:

1. If, in the opinion of the Engineer, the material at or above normal grade is unsuitable for use as backfill, it shall be removed and disposed of to such depths and widths within the limits of payment as ordered by the Engineer. Normal grade is defined as the elevation of the trench bottom, as shown on the drawings.

2. The quantity of earth excavation and backfill of unsuitable material above normal grade to be included for payment shall be the number of cubic yards of unsuitable
material ordered to be removed and measured by the Engineer within the trench payment limit shown on the contract drawings, excluding quantities paid under other items.

3. Topsoil, paving materials, frozen material or ledge excavation above the normal grade of the trench excavation will not be considered for payment.

4. The unit price for this item shall constitute full compensation for excavation of unsuitable material above normal grade and disposal of unsuitable material, excluding materials noted above, and furnishing, installing and compacting approved backfill materials as specified in the Contract Documents.

5. The Contractor will not be reimbursed for excavation of unsuitable material above normal grade, which has not been ordered by the Engineer.

C. EXCAVATION AND BACKFILL OF UNSUITABLE MATERIAL BELOW NORMAL GRADE:

1. If, in the opinion of the Engineer, the material at or below normal grade is unsuitable for use as foundation, it shall be removed and disposed of to such depths and within the limits of payment. Normal grade is defined as the elevation of the proposed pipeline trench bottom, as indicated on the drawings.

2. The quantity of earth excavation and backfill below normal grade to be included for payment shall be the number of cubic yards of unsuitable material ordered to be removed and measured by the Engineer within the trench payment limit as indicated on the contract drawings.

3. The unit price for excavation and backfill of unsuitable material below normal grade shall constitute full compensation for excavation of unsuitable material below normal grade, disposal of unsuitable material, and furnishing, installing and compacting approved backfill materials as specified in Section 02300 of the Contract Documents.

4. The Contractor will not be reimbursed for excavation of unsuitable material below grade, which has not been ordered by Engineer. The Contractor shall backfill and compact any such over-excavated areas in accordance with the specifications, at no additional cost to the Owner.

D. ADDITIONAL EARTHWORK BELOW NORMAL GRADE:

Additional earthwork necessary to lower the pipeline below the grade indicated on the drawings, if ordered by the Engineer, shall be measured per cubic yard and paid at the contract unit price under the Item “Additional Earthwork Below Normal Grade.” Payment shall cover both earth excavation and backfill with excavated material. Payment for the removal, disposal, and replacement of unsuitable material shall be in accordance with Paragraphs B and C above.
2.08 CONTROLLED DENSITY FILL (CDF):
   
   A. CDF shall be measured per cubic foot and shall be paid at the contract unit price under the item “Controlled Density Fill”
   
   B. The unit price under this item shall constitute full compensation for purchase, transport, installation, plating and a 24-hour curing period before paving.

2.09 PAVEMENT REPLACEMENT:
   
   A. Bituminous pavement shall be measured per linear foot, square yard or ton of pavement completed, and shall be paid at the contract unit prices under the subdivisions of the item "Pavement Replacement" as further described below.
   
   B. Pavement disturbed by the Contractor's operations outside payment limit as defined in the water trench detail shall not be paid under these items, but shall be repaired to its original condition by the Contractor at no cost to the Owner
   
   C. Payment for Trench Pavement shall include furnishing, preparation, and installation of compacted gravel borrow sub base, binder course pavement, and tack coat, as specified in the drawings. Maintenance and repair of trench pavement shall not be separately measured for payment but shall be considered incidental to the cost of the trench pavement item.
   
   D. Pavement measured per linear foot shall be measured based on a horizontal projection to grade of the centerline of the completed pipeline(s) trench.
   
   E. Raising and adjusting castings and valve boxes shall not be measured separately for payment but shall be considered incidental to the project.

2.10 REPAIR AND RESTORATION OF PRIVATE PROPERTY:
   
   A. Payment shall be made at the contract unit prices under the subdivisions of the item "Repair and Restoration of Private Property." Exterior repair and restoration of private property shall be measured per location. Interior repair and restoration of private property shall be measured per man hour spent working within the building interior.
   
   B. The work of this section shall only include work approved by the Engineer and not included for payment in other items listed herein.
   
   C. Private Property shall be defined as the area that exists starting from the back edge of the sidewalk into, and including, the existing house or building, or as defined by the Engineer. If no sidewalk exists, than private property shall start six (6) feet from the edge of road, and include all land between this line, which runs parallel with the edge of road, into and including the area inside of the existing house or building, or as
defined by the Engineer.

D. Exterior private property shall be defined as the area outside of the building foundation footprint.

E. Interior private property shall be defined as the area inside the footprint of the building structure, including the building foundation.

F. The unit price for exterior repair and restoration of private property shall include full compensation for labor and materials required for excavation, backfill, complete landscaping and planting restoration, repair or replacement of retaining walls and fencing, walkways, sidewalks, driveways, pavement, pavestone, decks, stoops, and other exterior items outside of the building foundation footprint. The work shall only include work required to install the water service, approved by the Engineer, in writing, and not included for payment in other items listed herein. Work caused by the contractor’s operations or negligence shall not be included for payment and shall be completed at the Contractor’s expense.

G. The unit price for interior repair and restoration of private property shall include full compensation for all labor and materials required to return the interior of the building structure and foundation to preconstruction conditions, such as excavation, backfill, repairs to porches, foundations, and interior walls, ceilings, and floors. The work shall only include work required to install the water service, approved by the Engineer, in writing, and not included for payment in other items listed herein. Work caused by the contractor’s operations or negligence shall not be included for payment and shall be completed at the Contractor’s expense.

H. Ten (10) percent of payment for the subdivisions of the item “Repair and Restoration of Private Property” shall be withheld until at least 30 days after the private property has been restored to preconstruction conditions and there is evidence of new growth or that the work has not begun to fail, as determined by the Engineer. The ten (10) percent withholding is in addition to the standard five (5) percent retainage withheld on all work.

2.11 ON-CALL LICENSED PLUMBER

A. The work of this section shall be measured per hour worked per plumber, only for work approved by the Engineer, in writing, and when the plumbing work is not caused by Contractor’s operations or negligence.

B. The unit price for an on-call licensed plumber shall constitute full compensation for all valves, fittings, piping, other materials, and labor required to tie in the building plumbing on the downstream side of the meter to the new water service.

C. Payment shall be made at the contract unit price of the item “On-Call Licensed Plumber.”
D. Ten (10) percent of payment for the subdivisions of the item “On-Call Licensed Plumber” shall be withheld until at least 30 days after the plumbing work has been completed and restored to preconstruction conditions and there is no evidence of work failure, as determined by the Engineer. The ten (10) percent withholding is in addition to the standard five (5) percent retainage withheld on all work.

2.12 TRAFFIC DETAIL OFFICERS:

A. The services of uniformed officers shall be measured per hour worked and paid at the contract unit prices under the subdivisions of the item "Traffic Detail Officers." The unit prices under this item include administration charges required by the police.

C. The set prices for Uniformed Officers are based on the prevailing hourly wage rates. Payment will be made based on invoices submitted by the traffic authority to the Contractor. The Contractor shall forward copies of these invoices to the Engineer and include the cost in his Application for Payment. The Contractor shall make actual payment to the traffic authority and the Contractor shall be reimbursed by the Owner through the payment estimate, only after the Contractor has submitted a copy of a cancelled check or other proof of payment to the traffic authority. If police wages change during the course of the Contract, the unit prices under this item will be changed accordingly.

2.13 SUPPORT OF EXCAVATION:

A. Unless otherwise indicated, the work of this section shall not be separately measured for payment, but shall be considered incidental to the project.

B. No payment shall be made under this item for trench boxes, sheeting or steel plates used at the Contractor's option in the course of the work.

2.14 SIDEWALK REPLACEMENT:

A. Unless otherwise indicated, the work of this section shall not be measured separately for payment but shall be considered incidental to the project.

2.15 DUST CONTROL (CALCIUM CHLORIDE):

A. The work of this section shall not be measured separately for payment, but shall be considered incidental to the project.

2.16 ENVIRONMENTAL PROTECTION:

A. Unless otherwise indicated, the work of this section shall not be separately measured for payment, but shall be considered incidental to the project.

2.17 LOAMING AND SEEDING:
A. Unless otherwise indicated, the work of this section shall not be separately measured for payment but shall be considered incidental to the project.

2.18 DEWATERING:

A. Unless otherwise indicated, the work of this section shall not be separately measured for payment, but shall be considered incidental to the project.

2.19 SIGNAGE:

A. Unless otherwise indicated, the work of this section shall not be separately measured for payment, but shall be considered incidental to the project.

2.20 CURBING REPLACEMENT:

A. Unless otherwise indicated, the work of this section shall not be separately measured for payment, but shall be considered incidental to the project.

2.21 CONNECTIONS TO EXISTING MAINS:

A. Unless otherwise indicated, the work of this section shall not be separately measured for payment, but shall be considered incidental to the project.

2.22 FIELD CONCRETE:

A. Unless otherwise indicated, the work of this section shall not be separately measured for payment, but shall be considered incidental to the project.

2.23 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES:

A. Unless otherwise indicated, protection or temporary removal and replacement of existing utilities and structures as described in Section 01110 shall not be separately measured for payment, but shall be considered incidental to the project.

2.24 PAVEMENT MARKINGS:

A. Pavement markings shall not be separately measured for payment but shall be considered incidental to the project.

2.25 TRAFFIC SIGNAL LOOPING:

A. Repair and/or replacement of traffic signal looping by authorized installers that was disturbed by the Contractor’s actions shall not be separately measured for payment but shall be considered incidental to the project.

END OF SECTION
SECTION 01330
SUBMITTALS

PART 1 - GENERAL

1.01 WORK INCLUDED:
A. The Contractor shall provide the Engineer with submittals as required by the contract documents.

1.02 RELATED WORK:
A. Divisions 1 – 15 of these specifications that require submittals.

PART 2 - PRODUCTS
NOT USED

PART 3 - EXECUTION

3.01 GENERAL:
A. As required by the General Conditions, Contractor shall submit a schedule of shop and working drawing submittals.
B. The Contractor shall submit the shop and working drawing submittals either electronically or hard copy.

3.02 ELECTRONIC SUBMITTALS:
A. In accordance with the accepted schedule, the Contractor shall submit promptly to the Engineer by email (davida@wseinc.com) or on Compact Disc (mail to Weston & Sampson Engineers, attention: CSD), one electronic copy in Portable Document Format (PDF) of shop or working drawings required as noted in the specifications, of equipment, structural details and materials fabricated especially for this Contract.
B. Each electronic copy of the shop or working drawing shall be accompanied by the Engineer’s standard shop drawing transmittal form, included as Exhibit 1 of this section (use only for electronic submittals), on which is a list of the drawings, descriptions and numbers and the names of the Owner, Project, Contractor and building, equipment or structure.
C. The Contractor shall receive a shop drawing memorandum with the Engineer’s approval or comments via email.
3.03 HARD COPY SUBMITTALS:

A. In accordance with the accepted schedule, the Contractor shall submit promptly to the Engineer, by mail (to Weston & Sampson Engineers, attention: CSD), six (6) copies each of shop or working drawings required as noted in the specifications, of equipment, structural details and materials fabricated especially for this Contract.

B. Each shipment of drawings shall be accompanied by the Engineer’s (if applicable) standard shop drawing transmittal form on which is a list of the drawings, descriptions and numbers and the names of the Owner, Project, Contractor and building, equipment or structure.

3.04 SHOP AND WORKING DRAWINGS:

A. Shop and working drawings shall show the principal dimensions, weight, structural and operating features, space required, clearances, type and/or brand of finish of shop coat, grease fittings, etc., depending on the subject of the drawings. When it is customary to do so, when the dimensions are of particular importance, or when so specified, the drawings shall be certified by the manufacturer or fabricator as correct for this Contract.

B. 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 shop and working drawings shall be prepared on standard size, 24-inch by 36-inch sheets, except those, which are made by changing existing standard shop or working drawings. All drawings shall be clearly marked with the names of the Owner, Project, Contractor and building, equipment or structure to which the drawing applies, and shall be suitably numbered. Each shipment of drawings shall be accompanied by the Engineer’s (if applicable) standard shop drawing transmittal form on which is a list of the drawings, descriptions and numbers and the names mentioned above.

C. Only drawings that have been prepared, 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 Contract Documents in all respects. Shop drawings shall be reviewed and marked with the date, checker's name and indication of the Contractor's approval, and only then shall be submitted to the Engineer. Shop drawings unsatisfactory to the Contractor shall be returned directly to their source for correction, without submittal to the Engineer. Shop drawings submitted to the Engineer without the Contractor's approval stamp and signature will be rejected. Any deviation from the Contract Documents indicated on the shop drawings must be identified on the drawings and in a separate submittal to the Engineer, as required under subsection 6.17 Shop Drawings and Samples; D. Submittal Procedures, Paragraph 3 of the 1996 General Conditions.
D. The Contractor shall be responsible for the prompt submittal and resubmittal, as necessary, of all shop and working drawings so that there will be no delay in the work due to the absence of such drawings.

E. The Engineer will review the shop and working drawings as to their general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections of comments made on the drawings during the review do not relieve the Contractor from compliance with requirements of the Contract Documents. The Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner. The review of the shop drawings is general and shall not relieve the Contractor of the responsibility for details of design, dimensions, code compliance, etc., necessary for interfacing with other components, proper fitting and construction of the work required by the Contract and for achieving the specified performance. The Engineer will review submittals two times: once upon original submission and a second time if the Engineer requires a revision or corrections. The Contractor shall reimburse the Owner amounts charged to the Owner by the Engineer for performing any review of a submittal for the third time or greater.

F. With few exceptions, shop drawings will be reviewed and returned to the Contractor within 30 days of submittal.

G. No material or equipment shall be purchased or fabricated especially for this Contract nor shall the Contractor proceed with any portion of the work, the design and details of which are dependent upon the design and details of equipment or other features for which review is required, until the required shop and working drawings have been submitted and reviewed by the Engineer as to their general conformance and compliance with the project and its Contract Documents. All materials and work involved in the construction shall then be as represented by said drawings.

H. Two copies of the shop and working drawings and/or catalog cuts will be returned to the Contractor. The Contractor shall furnish additional copies of such drawings or catalog cuts when he needs more than two copies or when so requested.

END OF SECTION
EXHIBIT 1 TO SECTION 01330 SUBMITTALS

SHOP DRAWING TRANSMITTAL FORM
# Shop Drawing Transmittal

**Instructions for Preparing Transmittal**

No action will be taken on any item unless accompanied by this form. Type or print all entries.

- **TRANSMIT NOS.** to be consecutive (1, 2, 3, etc.).
- Each resubmittal of same item shall use same number with suffix letter (A, B, etc.).
- **SPEC. SECT. NO.** Only one spec. section no. to each transmittal.
- **DESCRIPTION.** Complete identification of document or group of documents.
- **SOURCE.** Originator of document(s) being submitted.

- **DRAWING NO:** Identification of document(s).
- **NO. of COPIES:** Usually 6 or as directed/specified.
- **CONTRACT DRAWING REFERENCE:** Contract drawing number(s) showing details of document(s) being submitted.
- **SPECIAL INSTRUCTIONS:** Special cases and emergencies, changes in distribution and special handling requests, etc. should be entered here.
- **SIGNATURE OF CONTRACTOR:** Signature of individual who reviews and approves material prior to submittal to engineer.

Contractor to retain last copy. Submit original with two pink and two yellow copies.

## THIS SECTION TO BE COMPLETED BY CONTRACTOR

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### PROJECT NAME & CONTRACT NO.

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<td>Attention: CSD</td>
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<tr>
<td>Weston &amp; Sampson Engineers, Inc.</td>
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<td>5 Centennial Drive</td>
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This certifies that all items submitted herewith have been checked by the contractor. Are in conformance with the requirements of the contract documents, except as noted, and are approved by the contractor for this project.

FOR CONTRACTOR

SPECIAL INSTRUCTIONS:

**& TITLE:**

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**INSTALLATION SHALL PROCEED ONLY WHEN ACTION CODE IS 1 or 2.**

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Please! Bear down when handwriting — this is a 6 copy form & the last copy is yours!
SECTION 01550
SIGNAGE (TRAFFIC CONTROL)

PART 1 - GENERAL

1.01 WORK INCLUDED:

This Section covers furnishing and installing traffic control signs and other devices.

1.02 SYSTEM DESCRIPTION:

The Contractor shall furnish and install all construction signs deemed necessary by and in accordance with the latest edition of Part VI of the Manual on Uniform Traffic Control Devices (MUTCD) as published by the U.S. Department of Transportation.

PART 2 - PRODUCTS

2.01 TRAFFIC WARNING AND REGULATING DEVICES:

Contractor shall provide warning signs, barricades and other devices in accordance with the specifications provided in the MUTCD. Size of signs, lettering, colors, method of support and other factors prescribed in the MUTCD shall be adhered to.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. Contractor shall erect barricades, barrier fences, traffic signs, and other traffic control devices as required by the MUTCD, or as required by the Engineer, to protect the work area from traffic, pedestrians, and animals.

B. Contractor shall relocate barricades, signs and other devices as necessary as the work progresses.

C. Unless extended protection is required for specific areas, when the work has been completed, all temporary warning and regulatory devices used by the Contractor shall be removed so that traffic can move unimpeded through the area.

END OF SECTION
PART 1 - GENERAL

1.01 WORK INCLUDED:

A. This Section covers the provisions for complying with Commonwealth of Massachusetts requirements for construction zone safety plans on public works projects.

1.02 DESCRIPTION:

A. The Contractor shall implement traffic safety and control measures through the construction zone through road closures and detours and mitigate impacts on traffic outside of the construction zone in accordance with these contract documents.

1.03 RELATED WORK:

A. SECTION 01110, CONTROL OF WORK AND MATERIALS (MAINTENANCE OF TRAFFIC)

B. SECTION 01550, SIGNAGE (TRAFFIC CONTROL)

C. SECTION 01553, UNIFORMED OFFICERS FOR TEMPORARY TRAFFIC CONTROL

1.04 REFERENCES:

701 CMR 7.00 Use of Road Flaggers and Police Details on Public Works Projects

Massachusetts Department of Transportation Standard Specifications for Highways and Bridges – latest edition

PART 2 - PRODUCTS

2.01 Traffic control devices utilized by the Contractor shall meet the requirements of these contract documents and the latest Massachusetts Department of Transportation (MassDOT) Standard Specifications and Manual On Uniform Traffic Control Devices (MUTCD).

PART 3 - EXECUTION

3.01 OPERATION:
A. Contractor shall be responsible for providing all temporary traffic control devices including barricades, barrier fences, signs, drums, cones, impact attenuators and other traffic control devices in accordance with typical traffic management plans and details shown on the drawings or as required by the Engineer.

B. The Contractor shall prepare temporary traffic management plans and details that deviates significantly from the typical plans shown on the drawings and submit to the Engineer for review and approval prior to start of the work.

C. Contractor shall relocate barricades, signs and other devices as necessary as the work progresses as required by the Owner’s Traffic Control Officer or the Engineer.

D. Police details shall be utilized on this project.

E. If police details fail to show up for work at the construction zone at the usual time for start of work, or otherwise leave the jobsite before work is completed for the day, the provisions of the Alternative Plan will be followed by the Contractor.

3.02 ALTERNATIVE PLAN:

A. In accordance with 701 CMR 7.06(6), whenever required police details do not arrive on time or fail to show up for work, the Alternative Plan will be implemented by the Contractor.

B. The Alternative Plan for this project is as follows:

1. Contact local police department and municipality to inform them the scheduled police detail and request another police detail.

2. Redeploy crew to work in areas not requiring temporary traffic control (if available).

END OF SECTION
SECTION 01553

UNIFORMED OFFICERS FOR TEMPORARY TRAFFIC CONTROL

PART 1 - GENERAL

1.01 WORK INCLUDED:

A. This Section covers the provisions for furnishing Uniformed Officers for Traffic Control and Maintenance of Traffic as described in Section 01110 CONTROL OF WORK AND MATERIALS.

1.02 DESCRIPTION:

A. The Contractor shall coordinate with the local jurisdiction’s Traffic Control Officer to determine the number of Officers deemed necessary to provide for public safety and to maintain a smooth flow of traffic through the construction area(s) affected.

1.03 RELATED WORK:

A. SECTION 01110, CONTROL OF WORK AND MATERIALS (MAINTENANCE OF TRAFFIC)

B. SECTION 01550, SIGNAGE (TRAFFIC CONTROL)

D. SECTION 01552, CONSTRUCTION ZONE SAFETY PLAN

PART 2 - PRODUCTS

2.01 UNIFORMED OFFICERS:

A. Contractor shall provide the Traffic Control Officer with a minimum of 24 hours notice indicating the time of day, street location and confirm number of officers required for traffic control.

B. Contractor shall give the Traffic Control Officer a minimum of 2 hours prior cancellation notice should Contractor determine that due to weather or conditions beyond his control he would not need the scheduled officers.

C. Contractor shall pay for officer(s) at the prevailing rate established by the local police department should officers not be needed and the Contractor fails to cancel the officers as noted in 2.01.B above.
PART 3 - EXECUTION

3.01 OPERATION:

A. Contractor shall provide barricades, barrier fences, traffic signs, and other traffic control devices as required by the Owners Traffic Control Officer, or as required by the Engineer, to protect the work area from traffic, pedestrians, and animals.

B. Contractor shall relocate barricades, signs and other devices as necessary as the work progresses as required by the Owners Traffic Control Officer or the Engineer.

END OF SECTION
SECTION 01564
EXISTING FENCES

PART 1 - GENERAL

1.01 DESCRIPTION:

A. This section of the specification covers the removal and resetting of existing fences.

PART 2 - PRODUCTS

2.01 FENCING:

A. The materials removed shall be utilized to reset the fence. Where necessary, new posts and bases shall be furnished and installed by the Contractor. Any materials damaged or lost during or subsequent to removal shall be replaced by the Contractor without additional compensation.

B. All new materials required shall be equal in quality and design to the materials in the present fences.

PART 3 - EXECUTION

3.01 REMOVAL OF EXISTING FENCES:

A. The present fences shall be carefully removed together with all appurtenances and satisfactorily stored and protected until required for resetting.

3.02 ERECTION:

A. Fences shall be reset plumb and to the grades required and shall conform to the original fence or as the Engineer requires. Backfilling around the posts shall consist of suitable material satisfactorily compacted. If the fence posts were originally set in concrete bases they shall be reset in concrete bases.

3.03 PAINTING:

A. Painting, if required, shall be done as required by the Engineer.

END OF SECTION
SECTION 01570
ENVIRONMENTAL PROTECTION

PART 1 – GENERAL

1.01 DESCRIPTION:

A. The work covered by this section of the specifications consists of furnishing all labor, materials, tools and equipment and performing all work required for the prevention of environmental pollution during and as a result of construction operations under this contract.

B. See the attached list of lead water services for addresses requiring Environmental Protection measures.

1.02 RELATED WORK:

A. Section 00890, PERMITS
B. Section 01330, SUBMITTALS
E. Section 02240, DEWATERING
F. Section 02252, SUPPORT OF EXCAVATION
G. Section 02300, EARTHWORK

1.03 SUBMITTALS:

A. The Contractor shall submit for approval six sets of details and literature fully describing environmental protection methods to be employed in carrying out construction activities within 100 feet of wetlands, water resource area buffer zones, or 100-year flood planes.

PART 2 - PRODUCTS

2.01 COMPOST FILTER TUBE:

A. Compost filter tubes shall consist of a 100% biodegradable exterior jute or coir netting with 100% wheat straw interior filling as manufactured by Granite Environmental, Inc., Sebastian, Florida (Phone: 888-703-9889; website: www.GraniteEnvironmental.com), or approved equal.

B. The compost filter tube shall consist of a minimum tube diameter of 12-inches for slopes up to 50-feet in length with a slope ratio of 3H: 1V or steeper. Longer slopes may require larger tube diameter or additional coursing of filter tubes to create a filter
berm. Refer to the manufactures recommendations for situations with longer or steeper slopes.

C. Do not install in perennial, ephemeral or internment streams.

2.02 CATCH BASIN PROTECTION:

A. To trap sediment and to prevent sediment from clogging drainage systems, catch basin protection in the form of a siltation sack (Siltsack as manufactured by ACF Environmental, Inc. or approved equal) shall be provided as approved by the Engineer.

PART 3- EXECUTION

3.01 NOTIFICATION AND STOPPAGE OF WORK:

A. The Engineer will notify the Contractor in writing of any non-compliance with the specifications or at the requests of the Conservation Commission. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails to act promptly, the Owner may order stoppage of all or part of the work through the Engineer until satisfactory corrective action has been taken. No claim for an extension of time or for excess costs or damage incurred by the Contractor as a result of time lost due to any stop work orders shall be made unless it was later determined that the Contractor was in compliance.

3.02 AREA OF CONSTRUCTION ACTIVITY:

A. Insofar as possible, the Contractor shall confine his construction activities to those areas defined by the plans and specifications. All land resources within the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their present condition or be restored to a condition after completion of construction at least equal to that which existed prior to work under this contract.

3.03 PROTECTION OF WATER RESOURCE AREAS:

A. The Contractor shall not pollute streams, lakes, reservoirs, or wetlands with fuels, oils, bitumens, calcium chloride, acids or other harmful materials. It is the Contractor's responsibility to comply with all applicable Federal, State, County and Municipal laws regarding pollution of rivers and streams.

B. Special measures should be taken to insure against spillage of any pollutants into public waters.

3.04 LOCATION OF STORAGE AREAS:
A. The location of the Contractor's storage areas for equipment and/or materials shall be upon cleared portions of the job site or areas to be cleared as a part of this project, and shall require written approval of the Engineer. Plans showing storage facilities for equipment and materials shall be submitted for approval of the Engineer.

B. No excavated materials or materials used in backfill operations shall be deposited within a minimum distance of one hundred (100) feet of any watercourse or any drainage facility. Adequate measures for erosion and sediment control such as the placement of baled straw around the downstream perimeter of stockpiles shall be employed to protect any downstream areas from siltation.

C. There shall be no storage of equipment or materials in areas designated as wetlands. By the Conservation Commission.

D. The Engineer may designate a particular area or areas where the Contractor may store materials used in his operations.

3.05 PROTECTION OF LANDSCAPE:

A. The Contractor shall not deface, injure, or destroy trees or shrubs nor remove or cut them without written authority from the Owner. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorages unless specifically authorized by the Engineer. Excavating machinery and cranes shall be of suitable type and be operated with care to prevent injury to trees which are not to be removed, particularly overhanging branches and limbs. The Contractor shall, in any event, be responsible for any damage resulting from such use.

B. Branches, limbs, and roots shall not be cut except by permission of the Engineer. All cutting shall be smoothly and neatly done without splitting or crushing. When there is unavoidable injury to branches, limbs and trunks of trees, the injured portions shall be neatly trimmed and covered with an application of grafting wax or tree healing paint as directed.

C. Where, in the opinion of the Engineer, trees may possibly be defaced, bruised, injured, or otherwise damaged by the Contractor's equipment or by his blasting or other operations, the Engineer may require the Contractor to adequately protect such trees by placing boards, planks, poles or fencing around them. Any trees or landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the expense of the Contractor. The Engineer will decide what method of restoration shall be used, and whether damaged trees shall be treated and healed or removed and disposed of.

D. Cultivated hedges, shrubs, and plants which could be injured by the Contractor's operations shall be protected by suitable means or shall be dug up, balled and temporarily replanted and maintained. After construction operations have been substantially completed, they shall be replanted in their original positions and cared
for until growth is re-established. If cultivated hedges, shrubs, and plants are injured to such a degree as to affect their growth or diminish their beauty or usefulness, they shall be replaced by items of a kind and quality at least equal to that existing at the start of the work.

3.06 DISCHARGE OF DEWATERING OPERATIONS:

A. Any water that is pumped and discharged from the trench and/or excavation as part of the Contractor's water handling shall be filtered by an approved method prior to its discharge into a receiving water or drainage system.

B. Under no circumstances shall the Contractor discharge water to the areas designated as wetlands. When constructing in close proximity to a water resource area, the Contractor shall discharge water from dewatering operations directly to the nearest drainage system, stream, or waterway after filtering by an approved method.

C. The pumped water shall be filtered through a vegetative filter strip or a vegetated channel to trap sediment occurring as a result of the construction operations. The vegetated channel shall be constructed such that the discharge flow rate shall not exceed a velocity of more than 1 foot per second. Accumulated sediment shall be cleared from the channel periodically.

3.07 COMPOST FILTER TUBE:

B. Install tubes along contours and perpendicular to sheet or concentrated flow. Configure tubes around existing site features to minimize site disturbance and maximize capture area of stormwater run-off.

C. Secure tubes on slope with untreated hardwood stakes, up to 5-feet apart or as required to secure tubes in place. When staking is not possible, such as when tubes must be placed on pavement, heavy concrete or cinder blocks can be used behind tubes up to 5-feet apart or as required.

D. Tamp tubes in place to ensure good contact with soil surface. It is not necessary to trench tubes into existing grade. A 2-inch layer of loose compost material shall be placed on the uphill/flow side of tubes to fill space between soil surface and tubes.

E. Provide a 3-foot minimum overlap at ends of tubes to join in a continuous barrier and minimize unimpeded flow. Stake joining tubes snugly against each other to prevent unfiltered flow between them.

F. Stake ends of tubes with untreated hardwood stakes spaced 18-inches apart through tops of tubes. Curve ends of tubes uphill to prevent diversion of unfiltered run-off.

3.08 CATCH BASIN PROTECTION:
A. Catch basin protection shall be used for every catch basin, shown on the plans or as required by the Engineer, to trap sediment and prevent it from clogging drainage systems and entering wetlands. Siltation sacks shall be securely installed under the catch basin grate. Care shall be taken to keep the siltation sacks from breaking apart or clogging. All deposited sediment shall be removed periodically and at times prior to predicted precipitation to allow free drainage flow. Prior to working in areas where catch basins are to be protected, each catch basin sump shall be cleaned of all debris and protected. The contractor shall properly dispose of all debris at no additional cost to the Owner.

END OF SECTION
SECTION 01740
CLEANING UP

PART 1 - GENERAL

1.01 DESCRIPTION:

The Contractor must employ at all times during the progress of his work adequate cleanup measures and safety precautions to prevent injuries to persons or damage to property. The Contractor shall immediately, upon request by the Engineer provide adequate material, equipment and labor to cleanup and make safe any and all areas deemed necessary by the Engineer.

1.02 RELATED WORK:

A. Section 00700, GENERAL CONDITIONS
B. Section 01110, CONTROL OF WORK AND MATERIALS
C. Section 01140, SPECIAL PROVISIONS
D. Section 01570, ENVIRONMENTAL PROTECTION

PART 2 - PRODUCTS

Not applicable

PART 3 - EXECUTION

2.01 DAILY CLEANUP:

A. The Contractor shall clean up, at least daily, all refuse, rubbish, scrap and surplus material, debris and unneeded construction equipment resulting from the construction operations and sweep the area. The site of the work and the adjacent areas affected thereby shall at all times present a neat, orderly and workmanlike appearance.

B. Upon written notification by the Engineer, the Contractor shall within 24 hours clean up those areas, which in the Engineer's opinion are in violation of this section and the above referenced sections of the specifications.

C. If in the opinion of the Engineer, the referenced areas are not satisfactorily cleaned up, all other work on the project shall stop until the cleanup is satisfactory.

2.02 MATERIAL OR DEBRIS IN DRAINAGE FACILITIES:
A. Where material or debris has washed or flowed into or has been placed in existing watercourses, ditches, gutters, drains, pipes, structures, such material or debris shall be entirely removed and satisfactorily disposed of during progress of the work, and the ditches, channels, drains, pipes, structures, and work shall, upon completion of the work, be left in a clean and neat condition.

2.03 REMOVAL OF TEMPORARY BUILDINGS, STRUCTURES AND EQUIPMENT:

A. On or before completion of the work, the Contractor shall, unless otherwise specifically required or permitted in writing, tear down and remove all temporary buildings and structures built by him; shall remove all temporary works, tools and machinery or other construction equipment furnished by him; shall remove all rubbish from any grounds which he has occupied; shall remove silt fences and hay bales used for trapping sediment; and shall leave the roads and all parts of the property and adjacent property affected by his operations in a neat and satisfactory condition.

2.04 RESTORATION OF DAMAGED PROPERTY:

A. The Contractor shall restore or replace, when and as required, any property damaged by his work, equipment or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end the Contractor shall do as required all necessary highway or driveway, walk and landscaping work. Materials, equipment, and methods for such restoration shall be as approved by the Engineer.

2.05 FINAL CLEANUP:

A. Before acceptance by the Owner, the Contractor shall perform a final cleanup to bring the construction site to its original or specified condition. This cleanup shall include removing all trash and debris off of the premises. Before acceptance, the Engineer shall approve the condition of the site.

END OF SECTION
SECTION 02240
DEWATERING

PART 1 - GENERAL

1.01 WORK INCLUDED:

This section specifies designing, furnishing, installing, maintaining, operating and removing temporary dewatering systems as required to lower and control water levels and hydrostatic pressures during construction; disposing of pumped water; constructing, maintaining, observing and, except where indicated or required to remain in place, removing of equipment and instrumentation for control of the system.

1.02 RELATED WORK:

A. Section 00890, PERMITS
B. Section 01570, ENVIRONMENTAL PROTECTION
C. Section 02252, SUPPORT OF EXCAVATION
D. Section 02300, EARTHWORK

1.03 SYSTEM DESCRIPTION:

A. Dewatering includes lowering the water table and intercepting seepage which would otherwise emerge from the slopes or bottom of the excavation; increasing the stability of excavated slopes; preventing loss of material from beneath the slopes or bottom of the excavation; reducing lateral loads on sheeting and bracing; improving the excavation and hauling characteristics of sandy soil; preventing rupture or heaving of the bottom of any excavation; and disposing of pumped water.

1.04 QUALITY ASSURANCE:

A. The Contractor is responsible for the adequacy of the dewatering systems.

B. The dewatering systems shall be capable of effectively reducing the hydrostatic pressure and lowering the groundwater levels to a minimum of 2 feet below excavation bottom, unless otherwise required by the Engineer, so that all excavation bottoms are firm and dry.

C. The dewatering system shall be capable of maintaining a dry and stable subgrade until the structures, pipes and appurtenances to be built therein have been completed to the extent that they will not be floated or otherwise damaged.
D. The dewatering system and excavation support (see Section 02252, SUPPORT OF EXCAVATION) shall be designed so that lowering of the groundwater level outside the excavation does not adversely affect adjacent structures, utilities or wells.

1.05 SUBMITTALS

A. Contractor shall submit six copies of a plan indicating how they intend to control the discharge from any dewatering operations on the project, whether it is discharge of groundwater from excavations or stormwater runoff during the life of the project.

PART 2 - PRODUCTS: NOT APPLICABLE

PART 3 - EXECUTION

3.01 DEWATERING OPERATIONS:

A. All water pumped or drained from the work shall be disposed of in a manner that will not result in undue interference with other work or damage to adjacent properties, pavements and other surfaces, buildings, structures and utilities. Suitable temporary pipes, flumes or channels shall be provided for water that may flow along or across the site of the work. All disposal of pumped water shall conform to the provisions of Section 01570 ENVIRONMENTAL PROTECTION and Section 00890 PERMITS.

B. Dewatering facilities shall be located where they will not interfere with utilities and construction work to be done by others.

C. Dewatering procedures to be used shall be as described below:

1. Crushed stone shall encapsulate the suction end of the pump to aid in minimizing the amount of silt discharged.

2. For dewatering operations with relatively minor flows, pump discharges shall be directed into hay bale sedimentation traps lined with filter fabric. Water is to be filtered through the hay bales and filter fabric prior to being allowed to seep out into its natural watercourse.

3. For dewatering operations with larger flows, pump discharges shall be into a steel dewatering basin. Steel baffle plates shall be used to slow water velocities to increase the contact time and allow adequate settlement of sediment prior to discharge into waterways.

4. Where indicated on the contract drawings or in conditions of excess silt suspended in the discharge water, silt control bags shall be utilized in catch basins.

D. The Contractor shall be responsible for repair of any damage caused by his dewatering operations, at no cost to the Owner.
SECTION 02252

SUPPORT OF EXCAVATION

PART 1 - GENERAL

1.01 WORK INCLUDED:

A. This section of the specification covers wood sheeting and bracing for support of excavations. The requirements of this section shall also apply, as appropriate, to other methods of excavation support and underpinning which the Contractor elects to use to complete the work.

B. The Contractor shall furnish and place timber sheeting of the kinds and dimensions required, complying with these specifications, where indicated on the drawings or required by the Engineer.

1.02 RELATED WORK:

A. Section 02240, DEWATERING.

B. Section 02300, EARTHWORK.

1.03 QUALITY ASSURANCE:

A. This project is subject to the Safety and Health regulations of the U.S. Department of Labor set forth in 29 CFR, Part 1926, and to the Massachusetts Department of Safety and Department of Labor, Division of Occupational Safety “Excavation & Trench Safety Regulation (520 CMR 14.00)” and “Rules and Regulations for the Prevention of Accidents in Construction Operations (454 CMR 10.0 et seq.).” Contractors shall be familiar with the requirements of these regulations.

B. The excavation support system shall be of sufficient strength and be provided with adequate bracing to support all loads to which it will be subjected. The excavation support system shall be designed to prevent any movement of earth that would diminish the width of the excavation or damage or endanger adjacent structures.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Timber sheeting shall be sound spruce, pine, or hemlock, planed on one side and either tongue and grooved or splined. Timber sheeting shall not be less than nominal 2-inches thick.

B. Timber and steel used for bracing shall be of such size and strength as required in the excavation support design. Timber or steel used for bracing shall be new or undamaged
used material which does not contain splices, cutouts, patches, or other alterations which would impair its integrity or strength.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. Work shall not be started until all materials and equipment necessary for their construction are either on the site of the work or satisfactorily available for immediate use as required.

B. The sheeting shall be securely and satisfactorily braced to withstand all pressures to which it may be subjected and be sufficiently tight to minimize lowering of the groundwater level outside the excavation, as required in Section 02240, DEWATERING.

C. The sheeting shall be driven by approved means to the design elevation. No sheeting may be left so as to create a possible hazard to safety of the public or a hindrance to traffic of any kind.

D. If boulders or very dense soils are encountered, making it impractical to drive a section to the desired depth, the section shall, as required, be cut off.

E. The sheeting shall be left in place where indicated on the drawings or required by the Engineer in writing. At all other locations, the sheeting may be left in place or salvaged at the option of the Contractor. Steel or wood sheeting permanently left in place shall be cut off at a depth of not less than two feet below finish grade unless otherwise required.

F. All cut-off will become the property of the Contractor and shall be removed by him from the site.

G. Responsibility for the satisfactory construction and maintenance of the excavation support system, complete in place, shall rest with the Contractor. Any work done, including incidental construction, which is not acceptable for the intended purpose shall be either repaired or removed and reconstructed by the Contractor at his expense.

H. The Contractor shall be solely responsible for repairing all damage associated with installation, performance, and removal of the excavation support system.

END OF SECTION

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03/05/2012 02252-2
SECTION 02300
EARTHWORK

PART 1 - GENERAL

1.01 WORK INCLUDED:

The Contractor shall make excavations of normal depth in earth for trenches and structures, shall backfill and compact such excavations to the extent necessary, shall furnish the necessary material and construct embankments and fills, and shall make miscellaneous earth excavations and do miscellaneous grading.

1.02 RELATED WORK:

A. Section 00890, PERMITS

B. Section 01110, CONTROL OF WORK AND MATERIALS

C. Section 01570, ENVIRONMENTAL PROTECTION

D. Section 02240, DEWATERING

E. Section 02252, SUPPORT OF EXCAVATION

F. Section 02324, ROCK EXCAVATION AND DISPOSAL

G. Section 02745, PAVING

H. Section 02920, LOAMING AND SEEDING

I. Section 02930, TREES, SHRUBS, GROUND COVER AND LANDSCAPING

1.03 REFERENCES:

American Society for Testing and Materials (ASTM)

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<tr>
<td>ASTM</td>
<td>C330</td>
<td>Specification for Lightweight Aggregate for Structural Concrete.</td>
</tr>
<tr>
<td>ASTM</td>
<td>D1556</td>
<td>Test Method for Density of Soil in Place by the Sand Cone Method.</td>
</tr>
</tbody>
</table>
ASTM D1557 Test Methods for Moisture-density Relations of Soils and Soil Aggregate Mixtures Using Ten-pound (10 Lb.) Hammer and Eighteen-inch (18") Drop.

ASTM D2922 Test Methods for Density of Soil and Soil-aggregate in Place by Nuclear Methods (Shallow Depth).

Massachusetts Department of Transportation (MassDOT) Standard Specifications for Highways and Bridges.

Code of Massachusetts Regulations (CMR) 310.40.0032 Contaminated Media and Contaminated Debris

Code of Massachusetts Regulations (CMR) 520 CMR 14.00 Excavation & Trench Safety Regulation

1.04 SUBMITTALS: IN ACCORDANCE WITH REQUIREMENTS OF GENERAL SPECIFICATIONS, SUBMIT THE FOLLOWING:

Samples of all materials proposed for the project shall be submitted to the Engineer for review. Size of the samples shall be as approved by the Engineer.

1.05 PROTECTION OF EXISTING PROPERTY:

A. The work shall be executed in such manner as to prevent any damage to facilities at the site and adjacent property and existing improvements, such as but not limited to streets, curbs, paving, service utility lines, structures, monuments, bench marks, observation wells, and other public or private property. Protect existing improvements from damage caused by settlement, lateral movements, undermining, washout and other hazards created by earthwork operations.

B. In case of any damage or injury caused in the performance of the work, the Contractor shall, at its own expense, make good such damage or injury to the satisfaction of, and without cost to, the Owner. Existing roads, sidewalks, and curbs damaged during the project work shall be repaired or replaced to at least the condition that existed at the start of operations. The Contractor shall replace, at his own cost, existing benchmarks, observation wells, monuments, and other reference points, which are disturbed or destroyed.

C. Buried drainage structures and pipes, observation wells and piezometers, including those which project less than eighteen inches (18") above grade, which are subject to damage from construction equipment shall be clearly marked to indicate the hazard. Markers shall indicate limits of danger areas, by means which will be clearly visible to operators of trucks and other construction equipment, and shall be maintained at all times until completion of project.
1.06 DRAINAGE:

A. The Contractor shall provide, at its own expense, adequate drainage facilities to complete all work items in an acceptable manner. Drainage shall be done in a manner so that runoff will not adversely affect construction procedures or cause excessive disturbance of underlying natural ground or abutting properties.

1.07 FROST PROTECTION AND SNOW REMOVAL:

A. The Contractor shall, at its own expense, keep earthwork operations clear and free of accumulations of snow as required to carry out the work.

B. The Contractor shall protect the subgrade beneath new structures and pipes from frost penetration when freezing temperatures are expected.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. GRAVEL BORROW:

Gravel Borrow shall satisfy the requirements listed in MassDOT Specification Section M1.03.0, Type b.

B. CRUSHED STONE:

Crushed stone shall satisfy the requirements listed in MassDOT Specification Section M2.01.

C. SAND BORROW:

Sand Borrow shall satisfy the requirements listed in MassDOT Specification Section M1.04.0.

D. BACKFILL MATERIALS:

1. Class B Backfill:

Class B backfill shall be granular, well graded friable soil; free of rubbish, ice, snow, tree stumps, roots, clay and organic matter; with 30 percent or less passing the No. 200 sieve; no stone greater than two-third (2/3) loose lift thickness, or six inches, whichever is smaller.
2. Select Backfill:

Select backfill shall be granular, well graded friable soil, free of rubbish, ice, snow, tree stumps, roots, clay and organic matter, and other deleterious or organic material; graded within the following limits:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Finer by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-inch</td>
<td>100</td>
</tr>
<tr>
<td>No. 10</td>
<td>30-95</td>
</tr>
<tr>
<td>No. 40</td>
<td>10-70</td>
</tr>
<tr>
<td>No. 200</td>
<td>0-10</td>
</tr>
</tbody>
</table>

E. DCR ROADWAY TRENCH BACKFILL:

When work is performed in the travel way of a Department of Conservation and Recreation roadway and required by Permit, Controlled Density Fill (CDF) shall be used to backfill trenches. The CDF shall satisfy the requirements listed in MassDOT Specification Section M4.08.0.

F. PROCESSED GRAVEL:

1. Processed gravel shall consist of inert material that is hard, durable stone and coarse sand, free from loam and clay, surface coatings and deleterious materials. The coarse aggregate shall have a percentage of wear, by the Los Angeles Abrasion Test, of not more than 50.

2. The gradation shall meet the following requirements:

<table>
<thead>
<tr>
<th>Sieve Designation</th>
<th>Percentage Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-in.</td>
<td>100</td>
</tr>
<tr>
<td>1 ½-in.</td>
<td>70-100</td>
</tr>
<tr>
<td>¾-in.</td>
<td>50-85</td>
</tr>
<tr>
<td>No. 4</td>
<td>30-60</td>
</tr>
<tr>
<td>No. 200</td>
<td>0-10</td>
</tr>
</tbody>
</table>

3. The approved source of bank-run gravel material shall be processed by mechanical means. The equipment for producing crushed gravel shall be of adequate size with sufficient adjustments to produce the desired materials. The processed material shall be stockpiled in such a manner to minimize segregation of particle sizes. All processed gravel shall come from approved stockpiles.
PART 3 - EXECUTION

3.01 DISTURBANCE OF EXCAVATED AND FILLED AREAS DURING CONSTRUCTION:

A. Contractor shall take the necessary steps to avoid disturbance of subgrade during excavation and filling operations, including restricting the use of certain types of construction equipment and their movement over sensitive or unstable materials, dewatering and other acceptable control measures.

B. All excavated or filled areas disturbed during construction, all loose or saturated soil, and other areas that will not meet compaction requirements as specified herein shall be removed and replaced with a minimum 12-inch layer of compacted crushed stone wrapped all around in non-woven filter fabric. Costs of removal and replacement shall be borne by the Contractor.

C. The Contractor shall place a minimum of 12-inch layer of special bedding materials and crushed stone wrapped in filter fabric over the natural underlying soil to stabilize areas which may become disturbed as a result of rain, surface water runoff or groundwater seepage pressures, all at no additional cost to the Owner. The Contractor also has the option of drying materials in-place and compacting to specified densities.

3.02 EXCAVATION:

A. GENERAL:

1. The Contractor shall perform all work of any nature and description required to accomplish the work as shown on the Drawings and as specified.

2. Excavations, unless otherwise required by the Engineer, shall be carried only to the depths and limits shown on the Drawings. If unauthorized excavation is carried out below required subgrade and/or beyond minimum lateral limits shown on Drawings, it shall be backfilled with gravel borrow and compacted at the Contractor's expense as specified below, except as otherwise indicated. Excavations shall be kept in dry and good conditions at all times, and all voids shall be filled to the satisfaction of the Engineer.

3. In all excavation areas, the Contractor shall strip the surficial topsoil layer and underlying subsoil layer separate from underlying soils. In paved areas, the Contractor shall first cut pavement as specified in paragraph 3.02 B.1 of this specification, strip pavement and pavement subbase separately from underlying soils. All excavated materials shall be stockpiled separately from each other within the limits of work.

4. The Contractor shall follow a construction procedure, which permits visual identification of stable natural ground. Where groundwater is encountered, the size of the open excavation shall be limited to that which can be handled by the
Contractor's chosen method of dewatering and which will allow visual observation of the bottom and backfill in the dry.

5. The Contractor shall excavate unsuitable materials to stable natural ground where encountered at proposed excavation subgrade, as required by the Engineer. Unsuitable material includes topsoil, loam, peat, other organic materials, snow, ice, and trash. Unless specified elsewhere or otherwise required by the Engineer, areas where unsuitable materials have been excavated to stable ground shall be backfilled with compacted special bedding materials or crushed stone wrapped all around in non-woven filter fabric.

B. TRENCHES:

1. Prior to excavation, trenches in pavement shall have the traveled way surface cut in a straight line by a concrete saw or equivalent method, to the full depth of pavement. Excavation shall only be between these cuts. Excavation support shall be provided as required to avoid undermining of pavement. Cutting operations shall not be done by ripping equipment.

2. The Contractor shall satisfy all dewatering requirements specified in Section 02240 DEWATERING, before performing trench excavations.

3. Trenches shall be excavated to such depths as will permit the pipe to be laid at the elevations, slopes, and depths of cover indicated on the Drawings. Trench widths shall be as shown on the Drawings or as specified.

4. Where pipe is to be laid in bedding material, the trench may be excavated by machinery to, or just below, the designated subgrade provided that the material remaining in the bottom of the trench is not disturbed.

5. If pipe is to be laid in embankments or other recently filled areas, the fill material shall first be placed to a height of at least 12-inches above the top of the pipe before excavation.

6. Pipe trenches shall be made as narrow as practicable and shall not be widened by scraping or loosening materials from the sides. Every effort shall be made to keep the sides of the trenches firm and undisturbed until backfilling has been completed.

7. If, in the opinion of the Engineer, the subgrade, during trench excavation, has been disturbed as a result of rain, surface water runoff or groundwater seepage pressures, the Contractor shall remove such disturbed subgrade to a minimum of 12-inches and replace with crushed stone wrapped in filter fabric. Cost of removal and replacement shall be borne by the Contractor.

8. The Contractor shall obtain a trench permit from the municipality where the trench is located prior to making any excavations of trenches (any subsurface
excavation greater than three (3) feet in depth and fifteen (15) feet or less between soil walls as measured from the bottom).

9. All trenches required to be permitted must be attended, covered, barricaded, or backfilled. Covers must be road plates at least ¾-inch thick or equivalent, barricades must be fences at least 6-feet high with no openings greater than 4-inches between vertical supports and all horizontal supports required to be located on the trench-side of the fencing.

C. EXCAVATION NEAR EXISTING STRUCTURES:

1. Attention is directed to the fact that there are pipes, manholes, drains, and other utilities in certain locations. An attempt has been made to locate all utilities on the drawings, but the completeness or accuracy of the given information is not guaranteed.

2. As the excavation approaches pipes, conduits, or other underground structures, digging by machinery shall be discontinued and excavation shall be done by means of hand tools, as required. Such manual excavation, when incidental to normal excavation, shall be included in the work to be done under items involving normal excavation.

3. Where determination of the exact location of a pipe or other underground structure is necessary for properly performing the work, the Contractor shall excavate test pits to determine the locations.

3.03 BACKFILL PLACEMENT AND COMPACTION:

A. GENERAL:

1. Prior to backfilling, the Contractor shall compact the exposed natural subgrade to the densities as specified herein.

2. After approval of subgrade by the Engineer, the Contractor shall backfill areas to required contours and elevations with specified materials.

3. The Contractor shall place and compact materials to the specified density in continuous horizontal layers, not to exceed six (6) inches in uncompacted lifts. The degree of compaction shall be based on maximum dry density as determined by ASTM Test D1557, Method C. The minimum degree of compaction for fill placed shall be as follows:
### Percent of Maximum Density

<table>
<thead>
<tr>
<th>Location</th>
<th>Percent of Maximum Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below pipe centerline</td>
<td>95</td>
</tr>
<tr>
<td>Above pipe centerline</td>
<td>92</td>
</tr>
<tr>
<td>Below pavement (upper 3 ft.)</td>
<td>95</td>
</tr>
<tr>
<td>Embankments</td>
<td>95</td>
</tr>
<tr>
<td>Below pipe in embankments</td>
<td>95</td>
</tr>
<tr>
<td>Adjacent to structures</td>
<td>92</td>
</tr>
<tr>
<td>Below structures</td>
<td>95</td>
</tr>
</tbody>
</table>

4. The Engineer reserves the right to test backfill for conformance to the specifications and Contractor shall assist as required to obtain the information. Compaction testing will be performed by the Engineer or by an inspection laboratory designated by the Engineer, engaged and paid for by the Owner. If test results indicate work does not conform to specification requirements, the Contractor shall remove or correct the defective Work by recomparing where appropriate or replacing as necessary and approved by the Engineer, to bring the work into compliance, at no additional cost to the Owner. All backfilled materials under structures and buildings shall be field tested for compliance with the requirements of this specification.

5. Where horizontal layers meet a rising slope, the Contractor shall key each layer by benching into the slope.

6. If the material removed from the excavation is suitable for backfill with the exception that it contains stones larger than permitted, the Contractor has the option to remove the oversized stones and use the material for backfill or to provide replacement backfill at no additional cost to the Owner.

7. The Contractor shall remove loam and topsoil, loose vegetation, stumps, large roots, etc., from areas upon which embankments will be built or areas where material will be placed for grading. The subgrade shall be shaped as indicated on the Drawings and shall be prepared by forking, furrowing, or plowing so that the first layer of the fill material placed on the subgrade will be well bonded to the subgrade.

8. Where called for on the Drawings, Lightweight Fill shall be placed and compacted as recommended by the manufacturer. The exact number of passes shall be approved by the Engineer to insure stability of the layer. As soon as the compaction of each layer has been completed, the next layer shall then be placed. The Contractor shall take all necessary precautions during construction activities in operations on or adjacent to the Lightweight Fill to insure that the material is not over-compacted. Construction equipment, other than for compaction, shall not operate on the exposed Lightweight Fill. The top surface of the Lightweight Fill lying directly below the gravel course shall be chinked by additional rolling of the Lightweight Fill to prevent infiltration of fines.
B. TRENCHES:

1. Bedding as detailed and specified shall be furnished and installed beneath the pipeline prior to placement of the pipeline. A minimum bedding thickness shall be maintained between the pipe and undisturbed material, as shown on the Drawings.

2. As soon as practicable after pipes have been laid, backfilling shall be started.

3. Unless otherwise indicated on the Drawings, select backfill shall be placed by hand shovel in 6-inch thick lifts up to a minimum level of 12-inches above the top of pipe. This area of backfill is considered the zone around the pipe and shall be thoroughly compacted before the remainder of the trench is backfilled. Compaction of each lift in the zone around the pipe shall be done by use of power-driven tampers weighing at least 20 pounds or by vibratory compactors. Care shall be taken that material close to the bank, as well as in all other portions of the trench, is thoroughly compacted to densities required.

4. Class B backfill shall be placed from the top of the select backfill to the specified material at grade (loam, pavement subbase, etc.). Fill compaction shall meet the density requirements of this specification.

5. Water Jetting:
   a. Water jetting may be used when the backfill material contains less than 10 percent passing the number 200 sieve, but shall be used only if approved by the Engineer.
   b. Contractor shall submit a detailed plan describing the procedures he intends to use for water jetting to the Engineer for approval prior to any water jetting taking place.
   c. Compaction of backfill placed by water jetting shall conform to the requirements of this specification.

6. If the materials above the trench bottom are unsuitable for backfill, the Contractor shall furnish and place backfill materials meeting the requirements for trench backfill, as shown on the drawings or specified herein.

7. Should the Engineer order crushed stone for utility supports or for other purposes, the Contractor shall furnish and install the crushed stone as directed.

8. In shoulders of streets and road, the top 12-inch layer of trench backfill shall consist of processed gravel for sub-base, satisfying the requirements listed in MassDOT standard specification M1.03.1.
9. Trenches in state highways shall be backfilled with Controlled Density Fill, in accordance with the state highway permit included in Section 00890, PERMITS.

C. BACKFILLING ADJACENT TO STRUCTURES:

1. The Contractor shall not place backfill against or on structures until they have attained sufficient strength to support the loads to which they will be subjected. Excavated material approved by the Engineer may be used in backfilling around structures. Backfill material shall be thoroughly compacted to meet the requirements of this specification.

2. Contractor shall use extra care when compacting adjacent to pipes and drainage structures. Backfill and compaction shall proceed along sides of drainage structures so that the difference in top of fill level on any side of the structure shall not exceed two feet (2') at any stage of construction.

3. Where backfill is to be placed on only one side of a structural wall, only hand-operated roller or plate compactors shall be used within a lateral distance of five feet (5') of the wall for walls less than fifteen feet (15') high and within ten feet (10') of the wall for walls more than fifteen feet (15') high.

3.04 DISPOSAL OF SURPLUS MATERIALS:

A. Surplus excavated materials, which are acceptable to the Engineer, shall be used to backfill normal excavations in rock or to replace other materials unacceptable for use as backfill. Upon written approval of the Engineer, surplus excavated materials shall be neatly deposited and graded so as to make or widen fills, flatten side slopes, or fill depressions; or shall be neatly deposited for other purposes as indicated by the Owner, within its jurisdictional limits; all at no additional cost to the Owner.

B. Surplus excavated material not needed as specified above shall be hauled away and disposed of by the Contractor at no additional cost to the Owner, at appropriate locations, and in accordance with arrangements made by him. Disposal of all rubble shall be in accordance with all applicable local, state and federal regulations.

C. No excavated material shall be removed from the site of the work or disposed of by the Contractor unless approved by the Engineer.

D. The Contractor shall comply with Massachusetts regulations (310 CMR 40.0032) that govern the removal and disposal of surplus excavated materials. Materials, including contaminated soils, having concentrations of oil or hazardous materials less than an otherwise Reportable Concentration and that are not a hazardous waste, may not be disposed of at locations where concentrations of oil and/or hazardous material at the receiving site are significantly lower than the levels of those oil and /or hazardous materials present in the soil being disposed or reused.

END OF SECTION
SECTION 02324

ROCK EXCAVATION AND DISPOSAL

PART 1 - GENERAL

1.01 WORK INCLUDED:

The Contractor shall excavate rock, if encountered, to the lines and grades indicated on the drawings or as required, shall dispose of the excavated material, and shall furnish the required material as specified in Section 02300 EARTHWORK for backfill in place of the excavated rock.

1.02 RELATED WORK:

A. Section 02252, SUPPORT OF EXCAVATION

B. Section 02300, EARTHWORK

C. Section 03302, FIELD CONCRETE

1.03 DEFINITIONS:

A. The word "rock," wherever used as the name of the excavated material or material to be excavated, shall mean only boulders and pieces of concrete or masonry exceeding three cubic yards in volume, or solid ledge rock which, in the opinion of the Engineer, requires for its removal, drilling and blasting, wedging, sledgering, barring, or breaking up with a power-operated tool. No soft or disintegrated rock which can be removed by normal earth excavation methods, no loose, shaken, or previously blasted rock or broken stone in rock fillings or elsewhere, and no rock exterior to the maximum limits of measurement allowed, which may fall into the excavation, will be measured or allowed as "rock."

B. The word "earth," wherever used as the name of an excavated material, or material to be excavated shall mean all kinds of material other than rock as above defined.

1.04 QUALITY ASSURANCE:

A. The Contractor shall conform to all municipal ordinances and state and federal laws relating to the transportation, storage, handling, and use of explosives. In the event that any of the above mentioned laws, ordinances, or regulations require a licensed blaster to perform or supervise the work of blasting, said licensed blaster shall, at all times, have his license on the work site and shall permit examination thereof by the Engineer or other officials having jurisdiction.

B. The Contractor shall procure all permits required for blasting.
1.05 SUBMITTALS:

A. At least two weeks before beginning blasting operations, the Contractor shall submit to the Engineer for record the following data:

1. Name of Contractor or Subcontractor responsible for blasting and monitoring operations and license number.

2. Name, affiliation, and license number of the person or persons who will be directly responsible for designing each blast, supervising the loading of the shot, and firing it.

B. Copies of all permits required for blasting.

C. Results of pre-blast survey.

D. When blasting is in progress, daily reports on blasting operations and blast monitoring results.

1.06 DELIVERY/STORAGE AND HANDLING:

Delivery, storage and handling of explosives shall conform to all federal, state and local regulations and permits.

PART 2 - PRODUCTS - NOT APPLICABLE

PART 3 - EXECUTION

3.01 PREPARATION/PRE-BLAST SURVEY

If required, the pre-blast survey shall be conducted in accordance with state regulations and/or local permit requirements.

3.02 EXCAVATION:

A. The Contractor shall excavate rock to the lines and grades indicated on the drawings or as required by the Engineer. The excavated rock shall be removed and disposed of by the Contractor as specified for surplus excavated materials under Section 02300, EARTHWORK.

B. Work damaged by blasting shall be repaired or replaced at the Contractor's expense.

C. If rock is excavated beyond the limits of payment indicated on the drawings, specified, or authorized in writing by the Engineer, the excess excavation, whether resulting from overbreakage or other causes, shall be backfilled, by and at the expense of the Contractor, as specified below:
1. In pipe trenches, excess excavation shall be filled with the required material and compacted in the same manner as specified for the material in the zone around the pipe under Section 02300 EARTHWORK.

2. In excavations for structures, excess excavation in the rock beneath foundations shall be filled with concrete which shall have a minimum 28-day compressive strength of 3000 psi. Other excess excavation shall be filled with Class B backfill compacted to a minimum of 92 percent density (ASTM D1557 Method C) as specified under Section 02300, EARTHWORK.

3. If the rock below normal depth is shattered due to drilling or blasting operations of the Contractor, and the Engineer considers such shattered rock to be unfit for foundations, the shattered rock shall be removed and the excavation shall be backfilled with concrete as required, except that in pipe trenches crushed stone may be used for backfill, if approved. All such removal and backfilling shall be done by and at the expense of the Contractor.

D. When required by the Engineer, the Contractor shall remove all dirt and loose rock from designated areas and shall clean the surface of the rock thoroughly to determine whether seams or other defects exist.

E. When concrete is to be placed on rock, the rock shall be free of all vegetation, dirt, sand, clay, boulders, scale, excessively cracked rock, loose fragments, water, ice, snow, and other objectionable substances.

3.03 VIBRATION AND AIR BLAST MONITORING:

A. The Contractor shall measure air blast and vibration levels of blasting operations to assure compliance with all applicable regulations and local permits.

B. Records of each day's air blast and vibration measurements shall be submitted to the Engineer in writing no later than the start of the next day's work. Records shall include, as a minimum:

- Identification of instrument

- Name of observer

- Name of interpreter

- Distance and direction of recording station from the area of detonation

- Date and exact time of reading

- Type of ground at recording station
- Peak particle velocity for all components as well as resultant for all frequencies of vibrations
- Duration of motion with a velocity in excess of one thousandth of an inch per second
- A copy of the photographic record of seismograph readings
- Peak air blast level.

3.04 BLASTING RECORDS:

The Contractor shall prepare and submit to the Engineer daily blast reports, including logs of each blast. Reports shall be submitted to the Engineer no later than the start of the next day's work. However, during each day of blasting, the Contractor shall review and shall provide access for the Engineer to review the data from that day's blasting. Reports after each blast shall include at least the following information for each blast:

- Date, time, and location of blast
- Permit number and expiration date
- Amount and type of explosives used by weight and number of cartridges
- Total number of delays used and number of holes used for each delay
- On a diagram of the blast pattern, indicate total number and depth of holes, maximum charge per delay, maximum charge per hole, and corresponding delay number
- An evaluation of the blast indicating areas of significant overbreak, unusual results, and any recommended adjustments for the next blast.

3.05 POST BLASTING INSPECTIONS:

The Contractor shall examine any properties, structures, and conditions where complaints of damage have been received or damage claims have been filed. Advance notice shall be given to all interested parties so that the parties may be present during the final examination. Records of the final examination shall be signed and distributed to the owner of the property, the head of the local fire department, and the Engineer.

END OF SECTION
SECTION 02515

SERVICE CONNECTIONS (WATER SERVICES)

PART 1 - GENERAL

1.01 WORK INCLUDED:

This section covers the furnishing and installation of new water service connections and the replacement of existing water service connections in the right-of-way and private property, as specified herein, and as required by the Engineer.

1.02 RELATED WORK:

A. Section 01014, SCOPE AND SEQUENCE OF WORK

B. Section 02300, EARTHWORK

C. Section 02745, PAVING

D. Section 02920, LOAMING AND SEEDING

E. Section 02930, TREES, SHRUBS, GROUNDCOVER AND LANDSCAPING

F. Section 15408, PLUMBING

1.03 REFERENCES:

A. The following standards form a part of this specification:

American Society for Testing and Materials (ASTM)

ASTM B88 Seamless Copper Water Tube

ASTM B584 Copper Alloy Sand Castings for General Applications

ASTM D2737 Polyethylene (PE) Plastic Tubing

American Water Works Association (AWWA)

AWWA C800 Water-Service Line Fittings

AWWA C651 Disinfecting Water Mains

AWWA C901 Polyethylene Pressure Pipe & Tubing, 1/2-inch through 3-inch for Water Service

Federal Specifications (FS)

FS WW-T-799C Tube, Copper, Seamless
1.04 SUBMITTALS: IN ACCORDANCE WITH REQUIREMENTS OF THE GENERAL SPECIFICATIONS, SUBMIT THE FOLLOWING:

Six sets of manufacturer's literature of the materials of this section for review.

PART 2 - PRODUCTS

2.01 SERVICE PIPING:

A. Piping for buried copper water services shall be continuous Type K annealed seamless copper water tubing conforming to ASTM B88 Standard Specification for Seamless Copper Water Tube or U.S. Federal Specification WW-T-799C for Tube, Copper, Seamless. Tubing shall be 1-inch diameter unless otherwise indicated.

B. All water piping in buildings shall be in accordance with Section 15408.

C. Brass couplings, if required, for existing non-lead pipe to new copper service pipe connections shall be made of brass as specified in AWWA C800 and have compression connections on the inlet and compression connections on the outlet. All brass components that come into contact with potable water shall be made from either CDA/UNS Brass Alloys C89520 or C89833 and shall not contain more than twenty five hundredths of one percent (0.25% or less) total lead content by weight. The lead leach limit of the coupling shall be 5 parts per billion (ppb). Couplings shall be NSF/ANSI 61 Annex F and Annex G and NSF/ANSI 372 certified by an ANSI accredited organization and shall be stamped or embossed with a mark or name indicating that the product is manufactured from a low-lead alloy, as specified above.

D. Couplings required for new copper service piping to existing lead service piping connections shall be “Universal Transition Connection” couplings as manufactured by Philmac Pty Ltd. or approved equal. Couplings shall be polypropylene compression fittings, approved for use with potable water, NSF 61 listed, and fit a range of pipes, including lead and copper, without disassembly or modification. Couplings shall be rated as “High Pressure” per AWWA C800 (long term rated for 200 psi at 73° F and 150 psi at 100° F per ISO 14236). Coupling bodies and spacers shall be made of polypropylene, compression nuts shall be acetal or polypropylene, and split ring shall be of acetal with stainless steel grippers. Joint seal activation shall be accomplished solely by actuation of the compression nut and the seals shall not interfere with pipe insertion. No lubrication of the pipe shall be required to use the couplings.

2.02 CORPORATION STOPS:

A. Corporations stops shall be made of brass as specified in AWWA C800. All brass components that come into contact with potable water shall be made from either CDA/UNS Brass Alloys C89520 or C89833 and shall not contain more than twenty five hundredths of one percent (0.25% or less) total lead content by weight. The lead leach limit of the corporation stops shall be 5 ppb. Corporation stops shall be NSF/ANSI 61 Annex F and Annex G and NSF/ANSI 372 certified by an ANSI accredited
organization and shall be stamped or embossed with a mark or name indicating that the product is manufactured from a low-lead alloy, as specified above.

B. The inlet shall have AWWA taper thread (CC) connections and the outlet shall have compression connections.

C. Corporation stops shall be by Ford Meter Box Co., Inc., Wabash, IN; Red Hed Manufacturing Co., Lincoln, RI; Mueller Co., Decatur, IL; Cambridge Brass, Inc. Cambridge, ON; A.Y. McDonald, Dubuque, IA; or approved equal.

2.03 CURB STOPS:

A. Curb stops shall be of brass as specified in AWWA C800. All brass components that come into contact with potable water shall be made from either CDA/UNS Brass Alloys C89520 or C89833 and shall not contain more than twenty five hundredths of one percent (0.25% or less) total lead content by weight. The lead leach limit of the curb stops shall be 5 ppb. Curb stops shall be NSF/ANSI 61 Annex F and Annex G and NSF/ANSI 372 certified by an ANSI accredited organization and shall be stamped or embossed with a mark or name indicating that the product is manufactured from a low-lead alloy, as specified above.

B. Curb stops shall be ball style and the inlet and the outlet shall have compression connections.

C. Curb stops shall be Catalogue #B44-444-Q by Ford Meter Box Co., Inc., Wabash, IN; Mark II Oriseal Model #H-15219 (with drain) Mueller Co., Decatur, IL; Series 262 Cambridge Brass Inc., Cambridge, ON; A.Y. McDonald, Dubuque, IA; or approved equal.

2.04 CURB BOXES:

A. The cast iron box shall be the sliding Buffalo type with Arch pattern base. Minimum inside diameter of the upper section shall be 1-1/2-inch. Curb box lid shall have brass pentagonal nut.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. After inspecting the water service material inside the home or building, the Contractor shall excavate at the curb stop, exposing a minimum of three (3) feet of the existing water service on each side of the curb stop, prior to commencing replacement of new service piping. Contractor shall determine the material of both the private portion and non-private portion of the water service to verify the need for replacement.

B. If the non-private portion of the water service is determined to be non-copper, the Contractor shall discontinue the existing water service by shutting down the corporation
stop and replacing the water service with new copper piping to the property line and installing a new curb stop and curb box.

C. If the private portion of the water service is determined to be lead or lead lined, the Contractor shall discontinue the service by shutting down the curb stop and replacing the water service with new copper piping from the curb stop to the meter in the house. A new curb box shall be also be installed.

D. If the non-private portion is determined to be non-copper and the private portion of the service is determined to be lead or lead-lined, the Contractor shall install new copper pipe from the corporation stop to the meter in the house and a new curb stop and curb box as detailed.

E. The Contractor shall install a new corporation stop if the existing corporation stop cannot be reutilized and shall install a new curb stop and curb box if the existing curb box cannot be reused when installing new copper pipe for the private portion of the water service.

F. If the service material is copper on the non-private side of the curb stop and anything other than lead or lead lined on the private side of the curb stop, the Contractor shall backfill the area around the curb stop, install a new curb box, and return the surface to pre-construction conditions.

G. The Contractor shall document all service material conditions as described in Section 01014.

H. When connecting a new copper service to the existing water meter in the house, the Contractor shall install a new ball valve, fittings, and couplings in accordance with and as specified in Section 15408 and as shown in the standard construction details. If approved by the Engineer, existing meter setters can be reused.

I. The Owner will be responsible for pulling the water meter, reinstalling water meters, and reconnecting the meter reading radio module or MIU to the meter register.

J. Where services cannot be installed on private and non-private property by using traditional pulling methods, the Contractor shall immediately notify the Engineer. Once approved by the Engineer, the Contractor may begin to install the service via open-cut trench methods. Failure to notify the Engineer prior to excavating water services on private and non-private property may result in the Contractor being solely responsible for the cost of installing the water service and additional expenses occurred restoring private and non-private property to pre-construction conditions. Excavation on private property cannot occur without the homeowner or homeowner’s representative present.

K. The Contractor shall flush all renewed water services from inside of the house for a minimum of ten (10) minutes. Flushing from the exterior water spigot will not be acceptable.
L. The Contractor shall be responsible for removing all portions of lead or lead lined water service piping. No lead service piping shall remain as part of the water service, except as approved by the Engineer. If portions of the lead water service are not replaced, the Contractor shall be responsible for flushing the water service from inside of the house for a minimum of fifteen (15) minutes. Flushing from the exterior water spigot will not be acceptable.

M. Curb stops and boxes shall be set plumb, flush with the ground or paved surface, and centered with the box located directly over the stop. The box shall be set on a concrete block or flat stone. Earth fill shall be carefully tamped around the boxes to a distance of 4 feet on all sides of the box or to the undisturbed face of the trench, if less than 4 feet.

N. Curb stops shall be operational and accessible at all times during construction and warranty period. The Contractor shall verify the proper operation of all curb stops in the presence of the Engineer and/or Owner following completion of the project and prior to the acceptance of substantial completion.

O. All services shall be installed at 5 feet 0 inches of cover unless otherwise required by the Engineer. All interior piping shall be installed as detailed.

P. Service connections shall be tested and disinfected in accordance with AWWA standards.

Q. The Contractor shall completely finish a water service installation, including returning the building interior to pre-construction conditions, once he has started replacement operations. **No residence or building shall be left without water overnight.** Contractor shall be prepared to provide temporary water to any building, as necessary, if the water service renewal is delayed for any reason.

3.02 CARE AND PROTECTION OF PROPERTY:

A. All exterior and interior areas affected by the Contractor’s work shall be returned to pre-construction conditions. Building interior areas shall be returned to pre-construction conditions immediately after finishing the water service installation and prior to the Contractor mobilizing to the next water service installation address.

B. The Contractor shall be responsible for the preservation of all non-private and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage done to non-private or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition substantially similar in all material respects to that existing before the damage was done.

3.03 CLEAN UP:

A. During the course of the work, the Contractor shall keep the site of his operations in as clean and neat a condition as possible at all times. The Contractor shall remove, haul
away, and dispose of all residue resulting from the work, and at the conclusion of work at each location, shall make a thorough inspection of the work area to be sure that it is left clean and free of any debris resulting from the work.

A. GUARANTEE AND WARRANTY

1. All faulty installations within the warranty period shall be repaired by the Contractor at no additional cost to the Owner.

2. It will be presumed that any leaks or defects that occur upstream from the meter, if the meter is not removed during the service installation, or downstream of the meter, if the meter is removed during the service installation, and are visible from the meter, and reported by the customer to either the Contractor or the Owner within ninety (90) calendar days after completion of the service replacement, are the result of the replacement efforts, and the Contractor shall repair the damage at no additional cost. This presumption will not apply to leaks or other preexistent conditions noted by the Contractor during the replacement and reported to the Owner and the Engineer. This provision does not limit the duration of the Contractor's liability in case of negligence.

B. DAMAGES

1. During the replacement program, some breakage(s) may occur to customer service lines. The Contractor shall have sufficient equipment and materials on-hand and shall be prepared to immediately repair any damage to customer service lines at no additional cost to the Owner.

END OF SECTION

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SECTION 02534

RECONSTRUCTION OF EXISTING SEWERS AND DRAINS

PART 1 - GENERAL

1.01 WORK INCLUDED:

This Section covers work required to reconstruct affected piping where proposed water services cross existing street sewers, house sewer connections (referred to as sewers) and drains.

PART 2 - PRODUCTS

2.01 REPLACEMENT PIPE FOR SEWERS AND DRAINS:

A. The Contractor shall furnish all pipe, couplings, jointing materials, labor, tools and equipment necessary to reconstruct the sections of existing sewers or drains removed.

B. The size of replacement pipe shall closely approximate the size of existing section to be replaced, allowing a watertight joint to be made while maintaining the existing invert and slope.

C. Pipe couplings shall be Fernco Eccentric series, or approved equal, and shall be manufactured to properly align the pipe inverts and create an obstruction free flow.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. Unless field conditions or the plans require otherwise, water services shall pass over sewers and drains, except where, in the opinion of the Engineer, suitable cover and insulation cannot be provided. In such cases water services shall pass under sewers and drains.

B. The vertical clear distance between water services and sewers or drains will be no less than 18-inches, unless otherwise approved by the Engineer.

C. Where proposed water services pass under existing vitrified clay sewers, and damage to the sewer line cannot be prevented, and if approved by the Engineer, the sewer line shall be reconstructed using a minimum 9-foot section of ductile iron pipe or PVC sewer pipe. The pipe shall be installed such that joints of the reconstructed sewer are at a minimum distance of 4.5 feet on either side of the proposed water service.

D. Drains which are located in the field and are damaged by the Contractor shall be replaced with identical materials at the Contractor's expense unless the Engineer agrees in writing that the Contractor was not at fault.
E. Joints between existing pipe and replacement pipe shall be made with suitable watertight sleeves or couplings.

F. Joints shall not be backfilled until approved for watertightness by the Engineer.

G. Watertightness shall be determined by allowing water to flow through the repaired pipeline (street sewers, drains and house connections). If there is any visual leakage under these conditions, the pipe will not be accepted as watertight and shall be repaired at the Contractor's expense.

3.02 DIVERSION OF SEWAGE FLOWS:

A. During construction of the water services under existing street sewers and replacement of required sections of street sewers, sewage flows shall be diverted away from said street sewer. This may be accomplished by plugging both ends of the street sewer at the nearest manhole and pumping the sewage from the upstream manhole to the next downstream manhole.

B. The Contractor shall furnish all labor, materials, tools and equipment necessary to divert sewage flows from such street sewers.

C. During construction of water services under house sewer connections, and replacement of required section of house sewer connections, no sewage flow shall be allowed in the house sewer connections.

END OF SECTION
PART 1 - GENERAL

1.01 WORK INCLUDED:

The Contractor shall furnish all labor, materials and equipment and shall replace the pavements as herein specified.

1.02 RELATED WORK:

A. Section 00890, PERMITS
B. Section 02300, EARTHWORK

1.03 SYSTEM DESCRIPTION:

A. GENERAL

All trenches within roadways shall be paved with Trench Pavement as described below.

B. TYPE 1. TRENCH PAVEMENT

Areas shall be paved with trench pavement a minimum of one time per week or as required by the Engineer. No trenches shall remain unpaved over the weekend. Trench pavement shall include a gravel sub-base and binder course pavement with thicknesses as shown on the contract drawings. All trench edges shall be saw cut and/or clean and square prior to placement of pavement. A bituminous tack coat shall be applied to all exposed surfaces prior to placement of pavement. Contractor shall be responsible for maintaining and repairing trench pavement during construction and the warranty period.

1.04 REFERENCES

The following standards form a part of these specifications and indicate the minimum standards required:

American Society for Testing and Materials (ASTM)

ASTM D1557 Test for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 Pound Rammer and 18-Inch Drop

Massachusetts Department of Transportation (MassDOT)

Standard Specifications for Highways and Bridges

MassDOT 403 Reclaimed Base Course
AASHTO Standard Specifications for Materials and Methods of Sampling and Testing

1.05 SUBMITTALS: IN ACCORDANCE WITH REQUIREMENTS OF GENERAL SPECIFICATIONS, SUBMIT THE FOLLOWING:

Six sets of complete job mix formula shall be submitted to the Engineer at least two weeks before any of the work of this section is to begin.

PART 2 - PRODUCTS

2.01 GRAVEL SUBBASE:

A. Gravel subbase shall consist of inert material that is hard durable stone and coarse sand, free from loam and clay, surface coatings and deleterious materials.

B. Gradation requirements for gravel subbase shall be as specified in Section 02300, EARTHWORK for Gravel Borrow.

2.02 RECLAIMED SUBBASE:

A. Reclaimed subbase shall consist of crushed asphalt pavement, crushed cement concrete, and gravel borrow (as specified in paragraph 2.02) uniformly pre-mixed.

B. Reclaimed subbase mixtures shall be within the composition limits in accordance with MassDOT M1.11.0, with constituents that conform to Table A, below.

C. The approved source of reclaimed pavement borrow material shall be processed by mechanical means. The equipment for producing crushed material shall be of adequate size and with sufficient adjustments to produce the desired materials. The processed material shall be stockpiled in such a manner as to minimize segregation of particle sizes. All reclaimed pavement borrow material shall come from approved stockpiles.
2.03 HOT MIX ASPHALT PAVEMENT:

A. Pavements shall consist of hot mix asphalt.

B. Pavement mixtures shall be within the composition limits of base courses, binder courses, top courses and surface treatment, in accordance with MassDOT M3.11.03, with constituents that conform to Table A, below.

**TABLE A**

PERCENT BY MASS PASSING SIEVE DESIGNATION

<table>
<thead>
<tr>
<th>Standard Sieves (in.)</th>
<th>Reclaimed Subbase</th>
<th>Base Course</th>
<th>Binder Course</th>
<th>Top Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 in</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 in</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-1/2 in</td>
<td>70-100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 in</td>
<td>57-87</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>¾ in</td>
<td>50-85</td>
<td>80-100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/8 in</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>½ in</td>
<td>40-65</td>
<td>55-75</td>
<td>95-100</td>
<td></td>
</tr>
<tr>
<td>3/8 in</td>
<td></td>
<td></td>
<td></td>
<td>80-100</td>
</tr>
<tr>
<td>No.4</td>
<td>30-60</td>
<td>20-45</td>
<td>28-50</td>
<td>50-76</td>
</tr>
<tr>
<td>No.8</td>
<td>15-33</td>
<td>20-38</td>
<td>37-49</td>
<td></td>
</tr>
<tr>
<td>No.16</td>
<td></td>
<td></td>
<td></td>
<td>26-40</td>
</tr>
<tr>
<td>No.30</td>
<td>8-17</td>
<td>8-22</td>
<td>17-29</td>
<td></td>
</tr>
<tr>
<td>No.50</td>
<td>8-24</td>
<td>4-12</td>
<td>5-15</td>
<td>10-21</td>
</tr>
<tr>
<td>No.100</td>
<td></td>
<td></td>
<td></td>
<td>5-16</td>
</tr>
<tr>
<td>No.200</td>
<td>0-10</td>
<td>0-4</td>
<td>0-5</td>
<td>2-7</td>
</tr>
<tr>
<td>Binder</td>
<td>4-5</td>
<td>4.5-5.5</td>
<td>5.6-7.0</td>
<td></td>
</tr>
</tbody>
</table>

Percentages shown for aggregate sizes are stated as proportional percentages of total aggregate for the mix.

Unless authorized by the Engineer, no Job-Mix Formula will be approved which specifies:

More than 45% passing No. 8 for Top and Dense Binder Courses
More than 38% passing No. 8 for Modified Top Course
More than 55% passing No. 8 for Dense Mix
Less than 4% passing No. 200 for Top Course.
Less than 6% bitumen for Top Course.
C. The joint sealant shall be a hot poured rubberized emulsified asphalt sealant meeting the requirements of FS SS-S-1401.

D. The tack coat shall be an asphalt emulsion, RS-1 if required, conforming to MassDOT Section M3.03.0.

2.04 PAVEMENT MARKINGS:

A. Pavement markings shall conform to the requirements of MassDOT 860.

B. The mixture of the marking material shall be within the composition limits for reflectorized pavement markings as described in the MassDOT Specifications as follows:

1. Thermoplastic reflectorized pavement markings - M7.01.03/04.

B. Application of the glass beads to be used as reflector material on the striping shall conform to Sections 860.62 and M7.03.07 of the MassDOT Specifications.

PART 3 - EXECUTION

3.01 GENERAL:

Paving courses required for the project shall be as shown on the drawings and as specified herein. Pavement thicknesses specified are measured in compacted inches. If a pavement course thickness exceeds 2-1/2 compacted inches, the course shall be installed in multiple lifts with each lift not exceeding 2-1/2 compacted inches in thickness.

3.02 STATE HIGHWAY TRENCH REPAIR:

Contractor shall construct and repair trenches in accordance with these specifications. Trench shall be backfilled as stipulated in the permit and in accordance with Section 02300.

3.03 GRAVEL SUBBASE:

A. The gravel subbase to be placed under pavement shall consist of 12-inches of gravel evenly spread and thoroughly compacted.

B. The gravel shall be spread in layers not more than 4-inches thick, compacted measure. All layers shall be compacted to not less than 95 percent of the maximum dry density of the material as determined by ASTM D1557 Method C at optimum moisture content.
3.04 RECLAIMED SUBBASE:

A. The reclaimed borrow material to be placed under the pavement shall consist of 12-inches of reclaimed borrow material evenly spread and thoroughly compacted.

B. The reclaimed borrow material shall be spread and compacted in layers not exceeding 4-inches thick, compacted measure, except the last layer of reclaimed pavement borrow material shall be 2-inches thick, compacted measure. All layers shall be compacted to not less than 95 percent of the maximum dry density of the material as determined by ASTM D1557 Method C at optimum moisture content.

3.05 BITUMINOUS PAVEMENT:

A. Where specified and required by the Engineer and after placement of the gravel subbase, the Contractor shall place bituminous pavement above the trench, between the edges of the existing pavement.

B. The bituminous paving mixture, equipment, methods of mixing and placing, and the precautions to be observed as to weather, condition of base, etc., shall be in accordance with MassDOT 460 and as specified.

C. Immediately prior to installing the pavement, the trimmed edges shall be made stable and unyielding, free of loose or broken pieces and all edges shall be thoroughly broomed clean. Contact surfaces of trench sides, curbings, manholes, catch basins, or other appurtenant structures in the pavement shall be painted thoroughly with a uniform coating of asphalt emulsion (tack coat), just before any mixture is placed against them.

D. The pavement shall be repaired as necessary to maintain the surface of the pavement throughout the warranty period. If required by the Engineer, the Contractor shall remove the pavement and install or regrade the subbase for re-installation of bituminous pavement.

3.06 PAVEMENT PLACEMENT:

A. Unless otherwise permitted by the Engineer for particular conditions, only machine methods of placing the pavement shall be used. The equipment for spreading and finishing shall be mechanical, self-powered pavers, capable of spreading and finishing the mixture true to line, grade, width and crown. The mixtures shall be placed and compacted only at such times as to permit proper inspection and checking by the Engineer.

B. After the paving mixtures have been properly spread, initial and intermediate compaction shall be obtained by the use of steel wheel rollers having a weight of not less than 240 pounds per inch width of tread.
C. Final rolling of the pavement shall be performed by a steel wheel roller weighing not less than 285 pounds per inch width of tread at a mix temperature and time sufficient to allow for final smoothing of the surface and thorough compaction.

D. Immediately after placement of pavement, all joints between the existing and new pavement shall be sealed with hot poured rubberized asphalt joint sealant.

E. When required by the Engineer, the Contractor shall furnish and install additional paving to provide satisfactory transition for driveways and walkways. The transition installation will be considered incidental to the trench pavement installation.

3.07 ADDITIONAL PAVING:

A. If the Engineer determines that the existing bituminous concrete pavement on local streets is thicker than the permanent pavement specified herein, the Contractor may be required to install hot mix asphalt to obtain the depth of the existing pavement.

B. If for the installation of full width paving, the Engineer determines that the existing road surface requires additional leveling pavement, then the Contractor shall install additional hot mix asphalt to bring the section to proper line and cross section. Additional paving required to restore the proper line and cross section of binder course installed by the Contractor which has become rough and uneven shall be furnished and installed at the expense of the Contractor.

3.08 PARKING LOTS AND DRIVEWAYS:

A. Pavement shall consist of a 2-inch binder course and a 1-1/2-inch top course on a 12-inch gravel sub-base. All thicknesses are compacted thicknesses.

B. Adjacent concrete work, slate work, sidewalks, structures, etc., shall be protected from stain and damage during the entire operation. Damaged or stained areas shall be replaced or repaired to equal their original condition.

C. All joints between binder and top course shall be staggered a minimum of 6-inches.

D. After final rolling, no vehicular traffic of any kind shall be permitted on the pavement until it has cooled and hardened sufficiently to prevent distortion and loss of fines, and in no case in less than 6 hours.

E. Smoothness of all areas of the finished surface shall not vary more than 1/4-inch when tested with a 16 foot straight-edge, applied both parallel to and at right angles to the centerline of the paved area. At building entrances, curbs, and other locations where an essentially flush transition is required, pavement elevation tolerance shall not exceed plus or minus 1/8-inch. Irregularities exceeding these amounts, or which retain water on the surface, shall be corrected by removing the defective work and replacing or repairing it to the satisfaction of the Engineer.
F. The surface area to be seal coated, as shown on the drawings, shall be swept and air cleaned. The first coat shall be applied with eight (8) pounds of #30 silica sand blended with each gallon of emulsion applied at a rate of 0.15 gallons per square yard. The second coat shall be a straight sealer applied at the rate of 0.1 gallons per square yard.

G. The Contractor shall prepare the pavement surface for painting lines according to the recommendations of the paint manufacturer. Applied markings shall have clean-cut edges, true and smooth alignment and uniform film thickness of 15 mils, +/- 1.0. The Contractor shall be responsible for removing, to the satisfaction of the Engineer, tracing marks, and spilled paint applied in an unauthorized area.

3.09 PAVEMENT MARKINGS:

A. The Contractor shall replace all pavement markings removed or covered-over in carrying out the work, and as required by the Engineer, no sooner than 48 hours after completion of trench pavement installation. The markings shall be 4-inches wide, white or yellow, single or double lines as required.

B. When required by the Engineer, the Contractor shall provide temporary markings at no additional cost to the Owner.

3.10 TRAFFIC SIGNAL LOOPING:

A. The Contractor shall replace all traffic signal looping removed or impacted in carrying out the work, and as required by the Engineer, no sooner than 48 hours after completion of trench pavement installation. The looping shall match the existing looping in size, spacing, and installation location.

3.11 PAVEMENT REPAIR:

A. If required in the contract or if pavement becomes rough or uneven, permanent pavement patches and trenches shall be repaired and brought to grade utilizing "infrared" paving methods following completion of the construction.

B. The Contractor performing the work shall use care to avoid overheating the pavement being repaired.

C. Pavement repair shall extend a minimum of 6-inches beyond all edges of the pavement patch to assure adequate bonding at the pavement joints.

END OF SECTION
SECTION 02771
CURBING

PART 1 - GENERAL

1.01 WORK INCLUDED:

A. This section covers replacement of curbing removed and replaced during construction. All replacement curbing shall match the existing curbing type.

1.02 RELATED WORK:

A. Required earthwork is specified under Section 02300 EARTHWORK.

B. Section 02745, PAVING.

C. Section 02775, SIDEWALK CONSTRUCTION AND REPLACEMENT

1.03 REFERENCES:

The following standards form a part of these specifications, as referenced:

Massachusetts Department of Transportation (MassDOT) Standard Specifications for Highways and Bridges

1.04 SUBMITTALS: IN ACCORDANCE WITH REQUIREMENTS OF GENERAL SPECIFICATIONS, SUBMIT THE FOLLOWING:

Six sets of shop drawings, showing dimensions of typical curb sections, shall be submitted to the Engineer for review.

PART 2 - PRODUCTS

2.01 GRANITE CURBING:

A. Granite curbing shall be Type VAI conforming to Subsection M9.04.1 of the latest edition of the MassDOT Standard Specifications for Highways and Bridges.

B. Special shapes and corners shall be supplied as required.

2.02 GRANITE EDGING:

A. Granite edging shall be Type SB conforming to Subsection M9.04.2 of the latest edition of the MassDOT Standard Specifications for Highways and Bridges.

B. Special shapes and corners shall be supplied as required.
2.03 HOT MIX ASPHALT CURB


PART 3 - EXECUTION

3.01 GRANITE CURBING:

A. Removal and resetting and/or removal and replacing of granite curbing shall be in accordance with Section 580 of the latest edition of the MassDOT Standard Specifications for Highways and Bridges. The curbing shall have a 7-inch reveal unless otherwise required by the Engineer.

B. Except as modified herein or on the drawings, installation of curbing shall conform to Section 500 of the MassDOT Standard Specifications for Highways and Bridges.

C. Excavation shall be made to the bottom of the 6-inch gravel base below the curbing, the trench being sufficiently wide to permit thorough tamping. The base shall be compacted to a firm, even surface and shall be approved by the Engineer.

D. The curbing shall be set on edge and settled into place with a heavy wooden hand-rammer, to the line and grade required, straight and true for the full depth. The joints of the stone curbing shall be pointed with mortar for the full depth of the curbing. At approximately 50-foot intervals, a 1/2-inch joint shall not be filled with mortar but left free for expansion. The ends of the stone curbing at driveways and intersections shall be cut at a bevel or rounded as required by the Engineer.

E. The trench for the stone curbing shall be backfilled with approved material; the first layer to be 4-inches in depth, thoroughly rammed; the other layers to be more than 6-inches in depth and thoroughly rammed until the trench is filled.

F. Where indicated on the plans, or as required, drainage openings shall be made through the curbing at the elevations and of the size required.

3.02 GRANITE EDGING:

A. Except as modified herein and on the drawings, installation of granite edging shall conform to Section 500 of MassDOT Standard Specifications for Highways and Bridges.

B. The cement concrete base shall be placed on a well-tamped sub-base acceptable to the Engineer, and shall be constructed of 3000 psi concrete, minimum, as shown on the drawings.

C. The edging shall be set to the proper lines and grades on the concrete base and on a well-tamped sloping gravel surface.
3.03 BITUMINOUS CONCRETE CURB:

A. Replacement of bituminous concrete curbs shall be in accordance with Section 500 of the latest edition of the MassDOT Standard Specification for Highways and Bridges and all amendments thereto. The curbing shall have a 6-inch reveal unless otherwise required by the Engineer.

B. Unless modified herein, installation shall conform to Section 501.64 of the MassDOT Standard Specifications for Highways and Bridges.

C. When indicated on the plans, or as directed, drainage openings shall be made through the curb at the elevations and of the size required.

END OF SECTION
PART 1 - GENERAL

1.01 WORK INCLUDED:

The Contractor shall furnish all labor, materials, equipment and incidentals required to restore gravel sidewalks and/or construct new or replacement bituminous or cement concrete sidewalks where required or where existing sidewalks are disturbed by the Contractor, as described herein. The Contractor shall also furnish all materials and install wheelchair ramps disturbed by the construction or as required by the Engineer.

1.02 RELATED WORK:

A. Section 02300, EARTHWORK

B. Section 02771, CURBING

1.03 REFERENCES

The following standards form a part of these specifications, as referenced:

Massachusetts Department of Transportation (MassDOT)
Standard Specifications for Highways and Bridges

1.04 SUBMITTALS

A. The Contractor shall submit six (6) sets of shop drawings and/or materials specifications for each component of the work to be performed under this section of the Specifications.

1.05 SYSTEM DESCRIPTION:

A. GRAVEL SIDEWALKS:

Gravel sidewalks shall be restored to a condition at least equal to that existing immediately before the work was started.

B. BITUMINOUS AND CEMENT CONCRETE SIDEWALKS AND WHEELCHAIR RAMPS:

1. Except as otherwise indicated, bituminous and cement concrete sidewalks and wheelchair ramps shall be constructed in accordance with the requirements of Section 701, Sidewalks, Wheelchair Ramps and Driveways, of the latest edition of
the MassDOT Standard Specifications for Highways and Bridges, and all amendments thereto.

2. Wheelchair ramps shall be installed in new sidewalks at intersections in accordance with 521 CMR. When curbs or sidewalks are constructed or reconstructed on one side of the street, curb cuts shall also be installed on the opposite sides of the street, where there is a pedestrian path of travel. Curb cuts shall be located within the crosswalk and/or the pedestrian path of travel.

C. Water boxes, manhole frames, and all other castings shall be carefully set to the proposed finished grade.

D. Sidewalks shall not be less than 48-inches in width, excluding curbing. An unobstructed path of travel shall be provided which is at least 36-inches clear, excluding curbing.

PART 2 - PRODUCTS

2.01 HOT MIX ASPHALT SIDEWALKS:
   A. Sidewalks shall consist of hot mix asphalt.
   B. Hot mix asphalt shall conform to the requirements of MassDOT M3.11, Table A, Dense Mix.

2.02 CEMENT CONCRETE SIDEWALKS AND WHEELCHAIR RAMPS:
   A. Cement concrete sidewalks shall be constructed with air entrained Cement Concrete with a minimum compressive strength of 4000 psi at 28 days.
   B. Cement concrete shall conform to the requirements of MassDOT M4.02.

PART 3 - EXECUTION:

3.01 HOT MIX ASPHALT SIDEWALKS:
   A. The subgrade for the sidewalks shall be shaped parallel to the proposed surface of the sidewalks and shall be thoroughly rolled and tamped. All depressions occurring shall be filled with suitable material and again rolled or tamped until the surface is smooth and hard in order for a gravel foundation to be placed upon it.
   B. The hot mix asphalt sidewalk shall have compacted thickness as detailed, laid in two maximum course thickness as noted. The sidewalk pitch shall be 3/16-inch per foot of width or shall match the existing sidewalk.

3.02 CEMENT CONCRETE SIDEWALKS AND WHEELCHAIR RAMPS:
   A. Concrete for sidewalks and wheelchair ramps shall be as detailed.
B. The subgrade for the walk or driveway shall be shaped to a true surface conforming to the proposed slope of the walk, thoroughly rolled at optimum moisture content and tamped with a power roller weighing not less than one ton and not more than 5 tons. All depressions occurring shall be filled with suitable material and again rolled or tamped until the surface is smooth and hard.

C. After the subgrade has been prepared as hereinbefore specified, a subbase of gravel borrow at optimum moisture content shall be placed, thoroughly rolled by a power roller, and tamped. The gravel borrow shall be a minimum of 8-inches in thickness.

D. The forms for sidewalks shall be smooth, free from warp, strong enough to resist springing out of shape, and deep enough to conform to the thickness of the proposed walk. All mortar or dirt shall be completely removed from forms that have been previously used. The forms shall be well staked, thoroughly braced, and set to the established lines with their upper edge conforming to the grade of the finished walk. The finished walk shall have sufficient pitch from the outside to the edge of the walk to provide for surface drainage. This pitch shall be ¼-inch per foot unless otherwise required by the Engineer. Before the concrete is placed, the subbase for sidewalks shall be thoroughly dampened until it is moist throughout but without puddles of water.

E. Concrete shall be conveyed from the place of mixing to the place of deposit in such a manner that no mortar will be lost, and the composition of the mix shall be uniform, showing neither excess nor lack of mortar in any one place. The consistency shall be such that water will float to the surface under heavy tamping. The concrete shall be placed as close to its final position as practicable and thoroughly consolidated, with precautions taken not to overwork it while it is still plastic. The concrete shall be thoroughly spaded along the forms or screeds to eliminate voids and honeycombs at the edges. Retempering of concrete will not be permitted.

F. Concrete shall be placed in alternate slabs not exceeding 30 feet in length. Slabs shall be separated by transverse preformed expansion joint filler ½-inch thick. The surface of all concrete sidewalks shall be uniformly scored into block units of not more than 40 square feet. The depth of the scoring shall be at least one quarter of the thickness of the sidewalk.

G. When concrete sidewalks are constructed adjacent to curbing, building foundations, retaining walls, light pole bases or fixed structures, ½-inch thick premolded joint filler shall be used between the newly constructed sidewalk and the structure.

H. Finishing of the concrete surface shall be done by experienced and competent cement finishers as soon as is practicable. Finishing shall be delayed until all bled water and water sheen has left the surface and the concrete has begun to stiffen. The concrete surface shall be finished as directed with a steel trowel or wood float to give a smooth, uniform and attractive surface finish and uniformly scored into block units or areas of not more than 36 square feet. Following this, the Contractor shall draw a nylon push broom lightly over the surface to produce a non-slip surface. Application of neat cement to the surface to hasten hardening is prohibited.
I. The Contractor shall protect the newly placed concrete surface against vandalism and marking or defacing and must stand ready to replace any blocks which, in the opinion of the Engineer, are excessively marked or defaced, at no additional cost to the Owner. When completed the walks shall be kept moist and protected from traffic and weather for at least 3 days.

J. Adequate protection shall be provided where temperatures of 40°F or lower occur during placing of concrete and during the early curing period. The minimum temperature of fresh concrete after placing and for the first 3 days shall be maintained above 55°F. In addition to the above requirements, an additional 3 days of protection from freezing shall be maintained.

END OF SECTION
PART 1 - GENERAL

1.01 WORK INCLUDED:

This section covers the removal and replacement of highway guard rails, including, but not limited to, dismantling, removal and storage of guard rail sections, resetting, joining and recoating the guard rail, and the replacement of guard rail parts damaged by the contractor's operations.

1.02 RELATED WORK:

A. SECTION 02300, EARTHWORK

B. SECTION 01550, SIGNAGE (TRAFFIC CONTROL)

C. SECTION 03302, FIELD CONCRETE

1.03 REFERENCES:

A. The following standard form a part of these specifications and indicate the minimum standards required:

   Massachusetts Department of Transportation (MassDOT)
   Standard Specifications for Highways and Bridges
   Section 630     HIGHWAY GUARD REMOVED AND RESET

PART 2 - PRODUCTS

2.01 GENERAL:

A. Splices and end connections shall be of the type and design shown on the Drawings and shall be of such strength as to develop the full design strength of the rail elements.

B. All fittings, bolts, washers, and other accessories shall be galvanized in accordance with the requirements of AASHTO M111 and AASHO M183.

PART 3 - EXECUTION

3.01 GENERAL:
A. The Contractor shall perform all work to dismantle, remove, store, reset, join, and recoat all guard rail sections which must be removed to permit construction of the utilities. All work shall be in strict conformance with the MassDOT Standard Specifications for Highways and Bridges as noted in paragraph 1.03 A above.

B. The Contract shall supply, install and maintain portable positive barriers in place of all guardrails which are removed, until the guardrails have been reinstalled. Portable barriers shall meet the requirements of Section 01550, SIGNAGE (TRAFFIC CONTROL).

C. The Contractor shall replace at his own expense all parts and materials lost or damaged during the removal and resetting process. All galvanized surfaces which have been abraded so that the base metal is exposed, and threaded portions of all fittings and fasteners and cut ends of bolts shall be cleaned and painted with two coats of approved rust resistant paint.

D. Guard rails to be reset within the limits of the trench excavation shall not be reset until at least 30 days has elapsed after backfilling of that portion of the trench.

END OF SECTION
SECTION 02920

LOAMING AND SEEDING

PART 1 - GENERAL

1.01 WORK INCLUDED:

This section covers all labor, materials, and equipment necessary to do all loaming, seeding and related work as indicated herein. All lawns disturbed by the Contractor's operations shall be repaired as herein specified.

1.02 RELATED WORK:

A. NOT APPLICABLE

1.03 QUALITY ASSURANCE:

A. For a particular source of loam, the Engineer may require the Contractor to send approximately 10 pounds of loam to an approved testing laboratory and have the following tests conducted:

1. Organic concentration
2. pH
3. Nitrogen concentration
4. Phosphorous concentration
5. Potash concentration

B. These tests shall be at the Contractor's expense. Test results, with soil conditioning and fertilizing recommendations, shall be forwarded to the Engineer.

1.04 SUBMITTALS: IN ACCORDANCE WITH REQUIREMENTS OF GENERAL SPECIFICATIONS, SUBMIT THE FOLLOWING:

A. Six sets of information detailing the seed mixes, fertilizers, mulch material, slope protection material (if required) and origin of loam shall be submitted to the Engineer for review.

B. Three sets of test results shall be submitted to the Engineer for review.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. LOAM:
1. Loam shall be a natural, fertile, friable soil, typical of productive soils in the vicinity, obtained from naturally well-drained areas, neither excessively acid nor alkaline, and containing no substances harmful to grass growth. Loam shall not be delivered to the site in frozen or muddy condition and shall be reasonably free of stumps, roots, heavy or stiff clay, stones larger than 1-inch in diameter, lumps, coarse sand, noxious weeds, sticks, brush or other litter.

2. The loam shall contain not less than 4 percent nor more than 20 percent organic matter as determined by the loss of weight by ignition of oven-dried samples. Test samples shall be oven-dried to a constant weight at a temperature of 230 degrees F.

B. LIME:

Lime shall be standard commercial ground limestone containing at least 50 percent total oxides (calcium oxide and magnesium oxide), and 50 percent of the material must pass through a No. 100 mesh sieve with 98 percent passing a No. 2 mesh sieve.

C. FERTILIZER:

Fertilizer shall be commercial fertilizer, 10-10-10 fertilizer mixture containing at least 40 percent of organic nitrogen. It shall be delivered to the site in the original sealed containers, each showing the manufacturer's guaranteed analysis. Fertilizer shall be stored so that when used it will be dry and free flowing. No fertilizer shall be used which has not been marketed in accordance with State and Federal Laws, relating to fertilizers.

D. MULCH:

1. Materials to be used in mulching shall conform to the following requirements:

2. Straw Mulch - Straw Mulch shall consist of stalks or stems of grain after threshing.

3. Wood Fibre Mulch - Wood Fibre Mulch shall consist of wood fibre produced from clean, whole uncooked wood, formed into resilient bundles having a high degree of internal friction and shall be dry when delivered to the project.

E. SEED:

1. Seed shall be of an approved mixture, the previous year's crop, clean, high in germinating value, a perennial variety, and low in weed seed. Seed shall be obtained from a reliable seed company and shall be accompanied by certificates relative to mixture purity and germinating value.

2. Grass seed for lawn areas shall conform to the following requirements:
<table>
<thead>
<tr>
<th></th>
<th>Proportion by Weight</th>
<th>Germination Purity</th>
<th>Purity Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chewing’s Fescue</td>
<td>30%</td>
<td>70%</td>
<td>97%</td>
</tr>
<tr>
<td>Kentucky 31 Fescue</td>
<td>30%</td>
<td>90%</td>
<td>98%</td>
</tr>
<tr>
<td>Kentucky Blue Grass</td>
<td>20%</td>
<td>80%</td>
<td>85%</td>
</tr>
<tr>
<td>Domestic Rye Grass</td>
<td>20%</td>
<td>90%</td>
<td>98%</td>
</tr>
</tbody>
</table>

**PART 3 - EXECUTION**

3.01 **SURFACE PREPARATION:**

A. After approval of rough grading, loam shall be placed on areas affected by the Contractor's operations. Loam shall be at least 6-inches compacted thickness.

B. Lime shall be applied to bring the pH to 6.5 or, without a soil test, at the rate of 2-3 tons of lime per acre.

C. Fertilizer shall be applied according to the soil test, or without a soil test, at the rate of 1000 pounds per acre.

D. Loam shall be worked a minimum of 3-inches deep, thoroughly incorporating the lime and fertilizer into the soil. The loam shall then be raked until the surface is finely pulverized and smooth and compacted with rollers, weighing not over 100 pounds per linear foot of tread, to an even surface conforming to the prescribed lines and grades. Minimum depth shall be 6-inches after completion.

3.02 **SEEDING:**

A. Seeding shall be done when weather conditions are approved as suitable, in the periods between April 1 and May 30 or August 15 to October 1, unless otherwise approved.

B. If there is a delay in seeding, during which weeds grow or soil is washed out, the Contractor shall remove the weeds or replace the soil before sowing the seed, without additional compensation. Immediately before seeding is begun, the soil shall be lightly raked.

C. Seed shall be sown at the approved rate, on a calm day by machine.

D. One half the seed shall be sown in one direction and the other half at right angles. Seed shall be raked lightly into the soil to a depth of 1/4-inch and rolled with a roller weighing not more than 100 pounds per linear foot of tread.

E. The surface shall be kept moist by a fine spray until the grass shows uniform germination over the entire area. Wherever poor germination occurs in areas larger than
3 sq. ft., the Contractor shall reseed, roll, and water as necessary to obtain proper germination.

F. The Contractor shall water, weed, cut and otherwise maintain and protect seeded areas as necessary to produce a dense, healthy growth of perennial lawn grass.

G. If there is insufficient time in the planting season to complete the fertilizing and seeding, permanent seeding may be left until the following planting season, at the option of the Contractor or as required by the Engineer. In that event, a temporary cover crop shall be sown. This cover crop shall be cut and watered as necessary until the beginning of the following planting season, at which time it shall be plowed or harrowed into the soil, the area shall be fertilized and the permanent seed crop shall be sown as specified.

3.03 PLACING MULCH:

A. Straw Mulch shall be loosely spread to a uniform depth over all areas designated on the plans, at the rate of 4-1/2 tons per acre, or as otherwise required.

B. Straw Mulch may be applied by mechanical apparatus, if in the judgment of the Engineer the apparatus spreads the mulch uniformly and forms a suitable mat to control slope erosion. The apparatus shall be capable of spreading at least 80 percent of the hay or straw in lengths of 6-inches or more, otherwise it shall be spread by hand without additional compensation.

C. Wood Fibre Mulch shall be uniformly spread over certain selected seeded areas at the minimum rate of 1,400 pounds per acre unless otherwise required. It shall be placed by spraying from an approved spraying machine having pressure sufficient to cover the entire area in one operation.

3.04 SEEDING AND MULCHING BY SPRAY MACHINE:

A. The application of lime, fertilizer, grass seed and mulch may be accomplished in one operation by the use of an approved spraying machine. The materials shall be mixed with water in the machine and kept in an agitated state in order that the materials may be uniformly suspended in the water. The spraying equipment shall be so designed that when the solution is sprayed over an area, the resulting deposits of lime, fertilizer, grass seed and mulch shall be equal to the specified quantities.

B. A certified statement shall be furnished, prior to start of work, to the Engineer by the Contractor as to the number of pounds of limestone, fertilizer, grass seed and mulch per 100 gallons of water.

C. This statement should also specify the number of square yards of seeding that can be covered with the solution specified above. If the results of the spray operation are unsatisfactory, the Contractor will be required to abandon this method and to apply the lime, fertilizer, grass seed and mulch by other methods.
3.05 **INSPECTION AND ACCEPTANCE:**

At the beginning of the planting season following that in which the permanent grass crop is sown, the seeded areas will be inspected. Any section not showing dense, vigorous growth at that time shall be promptly reseeded by the Contractor at his own expense. The seeded areas shall be watered, weeded, cut and otherwise maintained by the Contractor until the end of that planting season, when they will be accepted if the sections show dense, vigorous growth.

END OF SECTION
SECTION 02930
TREES, SHRUBS, GROUNDCOVERS, AND LANDSCAPING

PART 1 - GENERAL

1.01 WORK INCLUDED:

A. This Section includes furnishing all labor, materials, equipment, plants, and incidental materials necessary to perform all operations related to the planting of all trees, shrubs, vines, herbaceous plants, ground covers, and for all appurtenant work, complete in place, maintained, and accepted, in accordance with the Specifications on public and private property.

B. The Contractor shall bear the responsibility and cost of furnishing and applying water or any other substances, as necessary until project completion or as required by the Engineer, to ensure the sustainability of plant materials, as part of the work of this contract.

1.02 RELATED WORK:

A. NOT APPLICABLE

1.03 SUBMITTALS:

In accordance with requirements of the general specifications, the Contractor shall submit the following:

A. Prior to planting, State nursery inspection certificates for all plant materials shall be submitted to the Engineer for review.

B. Samples and six copies of the manufacturer’s product data, as applicable, shall be submitted to the Engineer for review and approval for the following materials:

1. Limestone.
2. Fertilizer.
5. Organic Compost.
7. Mulch.
8. Guying and Staking Apparatus.
10. Anti-transpirant/Anti-desiccant.
11. Insecticides.
13. Fungicides.

PART 2 - PRODUCTS

2.01 PLANT MATERIALS:

A. The Contractor shall furnish and plant all plant materials disturbed by construction, to match existing plant types and in the same quantities and sizes as existing. No substitutions shall be permitted without the written approval of the Engineer.

B. Plants larger than those that currently exist may be used if approved by the Engineer. However, use of such oversized plants shall not be considered grounds for any increase in the contract price. If the use of larger plants is approved, the required spread of roots or ball of earth shall be increased in proportion to the size of the plant and plant pits shall be increased as necessary.

C. All plants shall be certified to have passed all required Federal and State inspection laws requiring ensuring freedom from plant diseases and insect infestations. The Contractor shall obtain clearance from applicable governing agencies, as required by law, before planting any plants delivered from outside the state in which they are to be planted.

D. All plants shall be nursery-grown under climatic conditions and environmental stresses similar to those in the locality of the project. All plants shall originate from nurseries that are no more than one Hardiness Zone higher (as established by the Arnold Arboretum, Jamaica Plain, MA) than where the plant is to be installed. Plants also shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the American Standard for Nursery Stock, ANSI-Z60.1, latest edition. All plants shall be legibly tagged with their proper botanical name.

E. No heeled-in plants or plants from cold storage shall be used. All plants shall be typical of their species or variety and shall have a normal habit of growth. Plants shall be sound, healthy, and vigorous, well branched and densely foliated when in leaf; shall be free of disease, insects, eggs or larvae; and shall have healthy, well-developed root systems. All parts of the plant shall be moist and shall show active green cambium when cut.
F. All nursery plants shall be balled and burlapped or container-grown and shall have been acclimatized for at least one growing season. 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, after removal from the container. No plants shall be loose in the container. Container-grown plants shall have no girdling roots and shall not be in a root-bound condition. Plants shall remain in their container until planted.

G. Care shall be exercised in digging and preparing field-grown plants for shipment and planting. Balled and burlapped materials shall have solid unbroken balls of earth of sufficient size to encompass all fibrous feeding roots necessary to ensure successful recovery and development of the plants. Balls shall be firmly wrapped in untreated biodegradable burlap and tied securely with wire cages and/or jute twine. Roots or balls of plants shall be adequately protected at all times from sun and drying winds. No plant shall be accepted when the ball of earth surrounding its roots has been badly cracked or broken preparatory to or during planting, or after the burlap, staves, wire cage, rope, or platform in connection with its transplanting have been removed. Soil characteristics (i.e., composition, texture, pH, etc.) of all field-grown plants shall closely match those of the soil where plant materials are to be planted.

H. The height of the trees, measured from the crown of the roots to the top of the top branch, shall be as approved by the Engineer. The branching height for deciduous trees installed adjacent to or within walks shall be 7 feet minimum, having been pruned to this height at least 1 year prior to transplanting. Except when a clump is designated, the trunk of each tree shall be a single trunk growing from a single, unmutilated crown of roots. No part of the trunk shall be conspicuously crooked as compared with normal trees of the same variety. The trunk shall be free from sunscald, frost cracks, or wounds resulting from abrasions, fire, or other causes. All pruning cuts shall comply with acceptable horticultural practices. No pruning wounds having a diameter of more than 1½-inches shall be present. Any such wounds must show vigorous bark growth on all edges. Evergreen trees shall be branched to within 1 foot of the ground. No tree that has had its leader cut or die shall be accepted.

I. Caliper measurements for tree trunks shall be taken 6-inches above ground for trees up to and including 4-inch caliper size and at 12-inches above ground for larger sizes.

J. Shrubs shall meet existing types, sizes, and shapes and shall be as approved by the Engineer. The measures for height are to be taken from the crown or root flare to the average height of the top of the shrub mass (not the longest branch). The fullness of each shrub shall correspond to the trade classification "No. 1". Single stemmed or thin plants will not be accepted. The side branches must be generous, well-twiggled and the plant as a whole must be well-bushed to the ground. The plants must be in a moist, vigorous condition, free from dead wood, bruises or other root or branch injuries.

K. Plants shall be delivered only after preparations for planting have been completed. Plants shall be handled and packed in a horticulturally approved manner and all necessary precautions shall be taken to ensure that plants arrive on-site in a healthy vigorous condition. Trucks used for transporting plants shall be equipped with covers to protect
plants from windburn, desiccation, and overheating during transport. Plants that have not been thoroughly watered shall not be accepted at the planting site. Any plants delivered to the site in a dry or wilted condition shall be rejected and replaced at no expense to the Owner. All plant materials shall be protected, watered and otherwise maintained prior to, during, and upon delivery to the site.

L. Plants shall be subject to inspection and approval by the Engineer at the place of growth, or upon delivery, for conformity to specification requirements as to quality, size, variety, and condition. Inspection and selection of plants before digging shall be at the option of the Engineer. The Contractor, or his representative, shall be present, if requested by the Engineer, for inspection of plants at the Nursery. Such approval shall not impair the right of inspection and rejection upon delivery at the site or during the progress of work, for size and condition of balls and roots, disease, insects and latent defects or injuries. Rejected plants shall be removed immediately from the site. Certificates of inspection of plant materials shall be furnished as may be required by Federal, State and other authorities to accompany shipments.

2.02 SOIL ADDITIVES AND AMENDMENTS:

A. LIMESTONE:

Lime shall be an approved agricultural limestone containing at least 50 percent total oxides (calcium oxide and magnesium oxide). The material will be ground such that 50 percent of the material will pass through a No. 100 mesh sieve and 98 percent will pass a No. 2 mesh sieve. Lime shall be uniform in composition, dry and free-flowing and shall be delivered to the site in the original sealed containers, each bearing the manufacturer’s guaranteed analysis.

B. FERTILIZER:

1. Fertilizer shall be a complete, standard commercial fertilizer, homogeneous and uniform in composition, dry and free-flowing, and shall be delivered to the site in the manufacturer’s original sealed containers, each bearing the manufacturer’s guaranteed analysis and marketed in compliance with State and Federal Laws. All fertilizer shall be used in accordance with the manufacturer’s recommendations.

2. Fertilizer for tree, shrub and groundcover plantings shall contain all major plant nutrients and minor trace elements essential to sustain plant growth and shall have the following analysis:

<table>
<thead>
<tr>
<th>Nitrogen (N)</th>
<th>Phosphorous (P)</th>
<th>Potassium (K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
</tbody>
</table>

3. As approved by the Engineer, a slow release root contact fertilizer installed at the time of planting, may be used in place of the above, at the discretion of the Contractor.
C. Organic Compost shall be a standard commercial product comprised of fully decomposed, 100 percent plant-derived, natural organic matter. Its composition shall furnish ample water holding capacity and cation exchange capacity for the retention of plant nutrients. Compost shall be free of sticks, stones, weed seeds, roots, mineral or other foreign matter and delivered air dry. It shall be free from excessive soluble salts, heavy metals, phytotoxic compounds, and/or substances harmful to plant growth and viability. Organic compost shall have an acidity range of 4.5 to 7.0 pH.

D. Sphagnum Peat Moss shall be a standard commercial product. Its composition shall furnish ample water holding capacity and cation exchange capacity for the retention of plant nutrients. Peat moss shall be free of sticks, stones, weeds or weed seeds, roots, mineral or other foreign matter. It shall be free from toxic substances and/or compounds harmful to plant growth and viability. It shall be delivered air dry in standard bales and shall have an acidity range of 3.5 to 5.5 pH.

E. Humus shall be natural humus, reed peat, or sedge peat. Its composition shall furnish ample water holding capacity and cation exchange capacity for the retention of plant nutrients. Humus shall be free of sticks, stones, weeds, roots, mineral or other foreign matter and/or toxic substances harmful to plant growth and viability. It shall be low in wood content, free from hard lumps and excessive amounts of zinc and delivered air dry in a shredded or granular form. The acidity range for humus shall be 5.5 to 7.5 pH, and the organic matter content shall be not less than 85 percent, as determined by loss on ignition. The minimum water holding capacity shall be 200 percent by weight on an oven-dry basis.

F. Manure shall be well-rotted, leached, cow manure not less than 8 months or more than 2 years old. It shall be free of sawdust, shavings, or refuse of any kind and shall not contain more than 25 percent straw. It shall contain no substances harmful to plant growth. The Contractor shall furnish information regarding chemical disinfectants, if any, that may have been used in storage of the manure.

2.03 PLANTING MIXTURE:

Planting mix shall consist of 7 parts loam borrow and 1 part organic compost, humus, sphagnum peat moss, or manure, thoroughly blended.

2.04 WATER:

Water shall be furnished by the Contractor, unless otherwise specified, and shall be suitable for irrigation and free from ingredients harmful to plant growth and viability. The delivery and distribution equipment required for the application of water shall be furnished by the Contractor, at no additional cost to the Owner.

2.05 MULCH:

Mulch shall be fibrous pliable shredded softbark mulch, not exceeding ½-inch in width. It shall be 98 percent organic matter with a pH range between 3.5 and 4.5 and a moisture
content not to exceed 35 percent. It shall be free of weeds, weed seeds, debris, and other materials harmful to plant growth and viability. Organic mulch shall be aged no longer than 2 years.

2.06 MATERIALS FOR STAKING, GUYING, AND WRAPPING:

A. Tree stakes shall be sound, untreated 2 x 3 (nominal) x 8-foot length Douglas Fir reasonably free of knots. No paint or stain shall be used in conjunction with tree stakes. Tying material shall be flexible braided nylon webbing, ¾-inch wide and have a tensile strength of 900 pounds. Webbing shall be ‘ArborTie’, or approved equal.

B. Drive anchors and guy wire assemblies shall be suitable for protecting trees and shall be sized in accordance with the manufacturer’s recommendations. No materials shall be used for guying that will girdle, chafe, or otherwise injure trees.

C. Tree wrap shall be duplex, waterproof kraft paper crinkled to 33-1/3 percent stretch, 4-to 6-inch wide strips. Tying materials shall be jute twine, 2-ply for shrubs and trees less than 3-inch caliper; 3-ply for larger plants.

2.07 TREE PAINT:

Tree paint shall not be used.

2.08 ANTI-TRANSPIRANT/ANTI-DESICCANT:

Anti-transpirant or anti-desiccant shall be ‘Wilt-Pruf’, as manufactured by Nursery Specialty Products, Inc., Groton Falls, NY, or approved equal. It shall be delivered in original sealed manufacturer's containers and used in accordance with the manufacturer's instructions.

2.09 INSECTICIDES:

A. No insecticides shall be used on-site without the Contractor notifying and obtaining the prior approval of the Engineer.

B. Insecticides shall be EPA registered and approved for use in public open spaces. All insecticides shall be handled by State licensed applicators only, delivered in the original sealed manufacturer’s containers, and used in accordance with the manufacturer’s instructions.

C. Insecticide use shall be limited and selective, only to control specific insect infestations, as identified by the Contractor or the Owner’s Representative, that may result in the disfigurement, decline, or death of plant materials.

2.10 HERBICIDES:
A. No herbicides shall be used on-site without the Contractor notifying and obtaining prior approval of the Engineer.

B. Herbicides shall be EPA registered and approved for use in public open spaces. All herbicide shall be handled by State licensed applicators only, delivered in the original sealed manufacturer’s containers, and used in accordance with the manufacturer’s instructions.

C. Herbicide for post-emergent application shall be glyphosate contact, ‘Roundup’, as manufactured by Monsanto, Inc., or approved equal.

D. Herbicide use shall be limited and selective, only to control specific weed infestations that have been identified by the Contractor or the Owner’s Representative.

2.11 FUNGICIDES:

A. No fungicides shall be used on-site without the Contractor notifying and obtaining prior approval of the Engineer.

B. Fungicides shall be EPA registered and approved for use in public open spaces. All fungicides shall be handled by State licensed applicators only, delivered in the original sealed manufacturer’s containers, and used in accordance with the manufacturer’s instructions.

C. Fungicide use shall be limited and selective, only to control specific fungal pathogenic disease infestations, as identified by the Contractor or the Owner’s Representative, that may result in the disfigurement, decline, or death of plant materials.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. All plants shall be subject to inspection and approval by the Engineer upon delivery to the site. No materials shall be planted until approval is received.

B. All work shall be performed by skilled workers with a minimum of 2 years planting experience, in accordance with accepted horticultural/nursery practices, under the full-time supervision of a Certified Nurseryman or Arborist.

C. All balled and burlapped plants that cannot be planted immediately upon delivery shall be set on the ground and the root balls shall be well protected with soil, wet moss, or other acceptable material. All foliage shall be protected and covered with perforated shade materials.

D. The planting season for evergreen trees and shrubs shall extend from the time the soil becomes workable in the spring until new growth appears, and from September 15 until November 30 in the fall. Deciduous trees and shrubs shall be planted only when dormant, either prior to bud break and/or before leaves appear in the spring, or subsequent to their
leaf drop in the fall. Ground covers shall be planted only after the last frost in the spring through mid-May. Planting season periods may be extended if weather and soil conditions permit only with the written approval of the Engineer. Extended or out-of-season planting requirements shall include application of antitranspirant and extra water as needed. Plant guarantee periods shall remain as stated below. Planting shall not be permitted in frozen ground.

E. All plant locations and outlines for planting beds shall be staked out for review and potential adjustment by the Engineer before any excavation is begun. In the event that rock, underground construction work or obstructions are encountered in any proposed planting pit or bed, the Engineer may select alternate locations. Where locations cannot be changed, the obstruction shall be removed, subject to the Engineer's approval, to a depth of not less than 3 feet below grade and not less than 6-inches below the bottom of the root ball when plant is properly set at the required grade. Removal of boulders or obstructions greater than 1 cubic yard in size shall be subject to approval and will be paid for by the Owner. No ledge will be removed to create planting pits or beds.

F. All planting pits shall be excavated with sloped walls, wider at the top than at the bottom, and scarified to eliminate glazing. Tree pits shall be at least 2 feet greater in diameter than the root ball of earth or root system. Shrub pits shall be at least 1 foot greater than the diameter of the root ball. Planting pits shall not be deeper than the height of the root ball.

G. When excavation occurs in areas of heavily compacted earth, stones, concrete chunks or other foreign matter, pits shall be dug at least 3 times the width of the rootball. Excavated material from plant pits shall be disposed of as required.

H. Container plants shall be removed from their growing container before planting. If roots are densely matted, the outer root mass shall be scored, sliced vertically, with a sharp knife to separate roots. All herbaceous plants and groundcovers shall be evenly spaced to produce a uniform effect and staggered in rows at intervals designated on the contract drawings.

I. Shrubs and trees shall be set in the center of planting pits, plumb and straight, and at such a level that after settlement the crown of the roots will be 1-inch above the surrounding finished grade. Root ball masses shall not be loosened, broken or damaged. When balled and burlapped plants are set, planting mixture shall be compacted around bases of balls to fill all voids. All tying materials, twine and rope shall be cut and removed. Biodegradable burlap shall be laid back or cut away from the top half of the ball. If a wire basket is present, the upper 2/3 of the basket shall be cut away and removed. Do not remove the entire basket. Roots or bare root plants shall be properly spread out and planting mixture carefully worked in among them. Broken or frayed roots shall be cleanly cut.

J. Backfill plant pits with planting mixture in layers of not more than 9-inches and firmly tamp each layer and water to sufficiently settle the backfilled soil before the next layer is put in place. When the planting pit is 2/3 backfilled, the hole shall be flooded and watered.
thoroughly so that the water level reaches the top of the planting pit. Allow water to soak in, then complete the backfilling operation. Immediately after planting pit is backfilled, a shallow basin 3-inches deep and slightly larger than the pit shall be formed with a ridge of soil for water retention. Form a common basin for plant materials throughout mass planting beds. After planting, lightly till the soil in planting beds between planting pits and rake smooth to eliminate compaction of soils.

K. All planting hole basins shall be flooded with water twice within the first 24 hours of planting, and watered not less than twice per week until final acceptance of the work.

L. All thin barked deciduous trees shall be wrapped after they are planted and before they are staked. Prior to wrapping, inspect trees for injury to trunks or improper pruning. Take corrective measures as necessary. Wrap trunks of all trees spirally from bottom to top with tree wrap and secure top and bottom at 2-foot intervals with jute twine. The wrapping shall overlap and entirely cover the trunk from the ground to the height of the second branches and shall be neat and snug. Overlap shall be approximately 2-inches.

M. Stake trees immediately after planting as detailed. All staking apparatus shall be adequate to hold the tree in a vertical position under severe weather conditions. All staking apparatus and tree trunk wrapping shall be removed and disposed of off-site by the Contractor at the end of one growing season.

N. Immediately after planting and staking operations are complete, all plant pit basins and plant beds shall be covered with approved mulch to the depths designated on the plans. Mulch shall not contact tree bark, cover tree root flares, or shrub crowns. No mulch shall be applied prior to the first watering.

O. The pruning of trees and shrubs shall only be permitted to remove dead or dying branch limbs and tips, sucker growth, water sprouts, crossing or rubbing branches, broken or damaged branches, diseased or insect infested limbs, and to preserve the natural character of the plant. Plant materials shall be pruned in accordance with American Nurserymen Association Standards and as required by the Engineer. Questionable weak limbs and branch removals that may disfigure the plant shall be left to the discretion of the Engineer. The tree leader shall never be permitted to be cut. Pruning shall be done with clean, sharp tools. All large pruning cuts that are ½-inch in diameter or larger shall be made along the bark branch ridge. Pruning cuts shall not breach or otherwise interfere with the branch collar. All pruning cuts less than ¼-inch diameter shall be made with hand pruners as close to the main stem as possible without damaging the cambium or bud. Tree paint shall not be used to cover pruning cuts.

P. As the work proceeds, the Contractor shall remove all debris from the site, including but not limited to branches, rock, paper, and rubbish. All areas shall be kept clean, neat and in an orderly condition at all times. Prior to final acceptance, the Contractor shall cleanup the entire area to the satisfaction of the Engineer.

3.02 MAINTENANCE:
A. Maintenance shall begin immediately after each plant is planted and shall continue until completion of the guarantee period and final acceptance of the project. Plants shall be watered, pruned, sprayed, fertilized, cultivated and otherwise maintained and protected. Tree guys and stakes shall be tightened and repaired. Defective work shall be corrected as soon as possible after it becomes apparent and weather and season permit.

B. Settled plants shall be reset to proper grade and position, planting pits and common basins restored, and dead materials removed and replaced. Planting beds and individual basins shall be neat in appearance, maintained to their original layout lines and kept free of weeds. Mulch shall be replaced as required to maintain proper depths.

C. Contractor shall make arrangements to provide sufficient water to maintain all trees, shrubs and plant materials until final acceptance. Plants shall be sprayed with anti-transparent or anti-desiccant if required by seasonal conditions or as required by the Engineer.

D. Planting areas shall be protected against trespass and damage of any kind during the maintenance period. This shall include the furnishing and installation of approved temporary fencing if necessary. If any plants become damaged during the maintenance period, they shall be treated or replaced as required by the Engineer at no additional cost to the Owner.

3.03 INSPECTION AND PRELIMINARY ACCEPTANCE:

A. Contractor shall provide written notice to the Engineer not less than 10 days before the anticipated date of inspection for preliminary acceptance. The Engineer shall recommend preliminary acceptance of the work of this Section only after completion and re-inspection of all necessary repairs, renewals or replacements.

B. Inspection and acceptance of plantings may be requested and granted in part, provided the areas for which acceptance is requested are relatively substantial in size, and with clearly definable boundaries. Acceptance and use of these areas by the Owner shall not waive any other provisions of this Contract.

3.04 GUARANTEE:

A. All plant materials shall be guaranteed for a period of one year after the date of completion of the specified maintenance period and preliminary acceptance of the project by the Owner.

B. When the work is accepted in part, the guarantee period shall extend from each partial acceptance to the terminal date of the last guarantee period. All guarantee periods terminate at one time.

C. Plants shall be healthy, free of pests and disease. Plants shall exhibit vigorous growth, shall bear foliage of normal density, size and color and shall have no less than
seventy-five percent (75%) of their branches alive at the end of the guarantee period. If the leader of any single-leader species is dead, the entire plant shall be considered dead.

D. Any plant required under this Contract that is dead or unsatisfactory, as determined by the Engineer, shall be removed from the site. These shall be replaced as soon as weather permits during the specified planting season, at no additional cost to the Owner, until the plants live through one year.

E. All replacements shall be plants of the same kind and size as specified on the Plant List. They shall be furnished and planted as specified above.

F. The guarantee of all replacement plants shall extend for an additional one-year period from the date of their acceptance as replacement.

G. Guarantee shall not apply to the replacement of unacceptable plants resulting from the removal, loss, or damage due to occupancy of the project in any part; vandalism or acts of neglect on the part of others; physical damage by animals, vehicles, etc.; and Acts of God, including but not limited to, catastrophic fire, hurricanes, riots, war, etc.

H. In the instance of curtailment of water by local water authorities (when supply was to be furnished by the Owner), the Contractor shall furnish all necessary water by water tanker, the cost of which will be approved and paid for by the Owner.

3.05 FINAL INSPECTION AND FINAL ACCEPTANCE:

A. At the end of the guarantee period, the Contractor shall provide written notice to the Engineer not less than 10 days before the anticipated date of final inspection for final acceptance.

B. The Engineer shall recommend final acceptance of the work of this Section only after completion and re-inspection of all necessary repairs, renewals or replacements.

END OF SECTION
PART 1 - GENERAL

1.01 WORK INCLUDED:

A. This Section covers concrete and all related items necessary to place and finish the concrete work.

B. Concrete encasement for piping with shallow cover and for encasement of telephone, and electrical duct bank when specified shall be installed as specified in this section.

1.02 RELATED WORK:

A. Section 02300, EARTHWORK

1.03 REFERENCES:

A. The following standards form a part of this specification:

   American Concrete Institute (ACI)

   ACI 304 Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.

   ACI 305 Recommended Practice for Hot Weather Concreting

   ACI 306 Recommended Practice for Cold Weather Concreting

   ACI SP-66 ACI Detailing Manual

   ACI 318 Building Code Requirements for Reinforced Concrete

   American Society for Testing and Materials (ASTM)

   ASTM A615 Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

   ASTM C33 Concrete Aggregates

   ASTM C94 Ready-Mixed Concrete

   ASTM C143 Test for Slump of Portland Cement Concrete

   ASTM C150 Portland Cement
1.04 SUBMITTALS: IN ACCORDANCE WITH REQUIREMENTS OF GENERAL SPECIFICATIONS, SUBMIT THE FOLLOWING:

Six copies of the statement of materials constituting the design of mixes for each size aggregate as required by ASTM C94 shall be submitted to the Engineer within one week following award of the Contract.

PART 2 - PRODUCTS

2.01 CONCRETE:

A. All concrete, reinforced or non-reinforced shall have a 28 day compressive strength of 3000 psi unless otherwise noted on the design drawings. A minimum of 5.5 sacks of cement per cubic yard and a maximum water cement ratio of 6.9 gallons per sack shall be used.

B. Concrete shall conform to ASTM C94. The Contractor shall be responsible for the design of the concrete mixtures. Slump shall be a maximum of 4-inches and a minimum of 2-inches, determined in accordance with ASTM C143.

C. Admixtures shall be as specified in subsection 2.05. No additional admixtures shall be used unless approved by the Engineer.

D. No additional water, except for the amount indicated by the design mix shall be added to the concrete without the prior permission of the Engineer.

2.02 CEMENT:

The cement shall be an approved brand of American manufactured Portland Cement, Type II conforming to the applicable requirements of ASTM C150.

2.03 AGGREGATES

A. Except as otherwise noted, aggregate shall conform to the requirements of ASTM C33.

B. Maximum size aggregate shall be 3/4-inch.

2.04 ADMIXTURES:

A. All concrete (unless otherwise directed) shall contain an air entraining agent. Air entrained concrete shall have air content by volume of 4 to 8 percent for 3/4-inch aggregate.
B. Air entraining agent shall be in accordance with ASTM C260 and shall be Darex AEA, as manufactured by W.R. Grace & Company; Placewel (air entraining Type), as manufactured by Johns Manville; Sika AER as manufactured by Sika Chemical Company; or an approved equal product.

C. Water reducing agent shall be WRDA, as manufactured by W.R Grace & Company; Placewel (non-air entraining Type), as manufactured by Johns Manville; Sika Plastiment as manufactured by Sika Chemical Company; or an approved equal product.

D. Water reducing agent-retarder shall be "Daratard," as manufactured by W.R. Grace & Company; Sika Plastiment as manufactured by Sika Chemical Company; or an approved equal product.

2.05 WATER:

A. Water for concrete shall be potable, free of deleterious amounts of oil, acid, alkali, organic matter and other deleterious substances.

2.06 CONCRETE FORMS:

A. Forms for exterior and interior surfaces which will be exposed to view after the work is completed, whether such surfaces are painted or unpainted, shall be new plywood stock, steel, tempered masonite, or other materials which will provide smooth concrete surfaces without subsequent surface plastering. Plastic or plastic-faced forms shall not be used, except with the prior approval of the Engineer.

B. Form ties shall be cone type or equal, with waterstop, which leaves no metal closer than 2-inches to finished face of concrete.

C. Form release agent shall be a non-staining, non-yellowing, non-toxic liquid free from kerosene and resins of the type recommended by the manufacturer of the forming system being used such as EZ strip by L&M Construction Chemicals, Omaha, NB and "Magic Kote" by Symons Corp., Des Plaines, IL or approved equal.

D. Where steel adjacent to vertical faces of forms cannot be otherwise secured, mortar doughnuts shall be used to prevent steel from lying too close to the finish vertical faces of the concrete

PART 3 - EXECUTION

3.01 PREPARATION:

A. Before placing concrete, forms and the space to be occupied by the concrete shall be thoroughly cleaned, and reinforcing steel and embedded metal shall be free from dirt, oil, mill scale, loose rust, paint or the material which would tend to reduce the bond.
B. Earth, concrete, masonry, or other water permeable material against which concrete is to be placed shall be thoroughly saturated with water immediately before concrete is placed.

C. No concrete shall be placed until the consolidation of the ground and the arrangement and details of forms and reinforcing have been inspected and approved by the Engineer.

3.02 FILL CONCRETE:

A. Fill concrete shall be placed in those locations as indicated on the design drawings. Fill concrete shall consist of materials as previously specified, with a minimum 28-day compressive strength of 3000 psi.

B. Before fill concrete is placed, the following procedures shall be used to prepare surfaces; all dirt, scum and laitance shall be removed by chipping and washing. The clean, roughened base surface shall be saturated with water, but shall have no free water on the surface. A coat of 1:2 cement-sand grout, approximately 1/8-inch thick, shall be well scrubbed into the thoroughly dampened concrete base. The concrete fill shall be placed immediately, before grout has dried or set.

C. Fill concrete shall be brought to lines and grades as shown on the design drawings.

3.03 CONCRETE PLACING DURING COLD WEATHER:

A. Concrete shall not be placed on frozen ground, and no frozen material or material containing ice shall be used. Materials for concrete shall be heated when temperature is below 40°F, or is expected to fall to below 40°F, within 73 hours, and the concrete after placing shall be protected by covering, heat, or both.

B. All details of Contractor's handling and protecting of concrete during freezing weather shall be subject to the approval of the Engineer. All procedures shall be in accordance with provisions of ACI 306.

3.04 CONCRETE PLACING DURING HOT WEATHER:

A. Concrete just placed shall be protected from the direct rays of the sun and the forms and reinforcement just prior to placing, shall be sprinkled with cold water. The Contractor shall make every effort to minimize delays, which will result in excessive mixing of the concrete after arrival on the job.

B. During periods of excessively hot weather (90°F or above), ingredients in the concrete shall be cooled insofar as possible and cold mixing water shall be used to maintain the temperature of the concrete at permissible levels all in accordance with the provisions of ACI 305. Any concrete with a temperature above 90°F, when ready for placement, will not be acceptable, and will be rejected.
3.05 FIELD QUALITY CONTROL:

A. Concrete inspection and testing shall be performed by the Engineer or by an inspection laboratory, designated by the Engineer, engaged and paid for by the Owner. Testing equipment shall be supplied by the laboratory, and the preparation of samples and all testing shall be performed by the laboratory personnel. Full assistance and cooperation, concrete for samples, and such auxiliary personnel and equipment as needed shall be provided by the Contractor.

B. At least 4 standard compression test cylinders shall be made and tested and 1 slump test from each day's placement of concrete. A minimum of four compression test cylinders shall be made and tested for each 100 cubic yards of each type and design strength of concrete placed. One cylinder shall be tested at 7 days, and two at 28 days. The fourth cylinder from each set shall be kept until the 28 day test report on the second and third cylinders in the same set has been received. If the average compressive strength of the two 28 day cylinders do not achieve the required level, the Engineer may elect to test the fourth cylinder immediately or test it after 56 days. If job experience indicates additional cylinder tests or other tests are required for proper control or determination of concrete quality, such tests shall be made.

C. The Engineer shall have the right to reject concrete represented by low strength tests. Rejected concrete shall be promptly removed and replaced with concrete conforming to the specification. The decision of the Engineer as to whether substandard concrete is to be accepted or rejected shall be final.

END OF SECTION
SECTION 15408
PLUMBING

PART 1 - GENERAL

1.01 WORK INCLUDED:

A. This section of the specification covers the complete interior plumbing work, including but not limited to the following:
   1. Pipe, fittings, and couplings
   2. Water valves
   3. Meter setters, if required to install meter as detailed in attached construction details.

B. Unless otherwise stated, the Owner will be responsible for pulling the existing water meter, reinstalling the water meter, and reattaching the radio module or MIU to the meter register, if required during water service replacement work.

1.02 RELATED WORK:

A. Section 01014 – SCOPE AND SEQUENCE OF WORK

B Section 02515 – SERVICE CONNECTIONS

1.03 SYSTEM DESCRIPTION:

A. The Contractor shall furnish and install all plumbing fixtures.

B. All materials and workmanship shall be suitable for the respective positions in the work and the type of service encountered. All equipment shall be constructed to operate safely without water hammer or undue wear.

1.04 QUALITY ASSURANCE:

A. The Contractor, at his own expense, shall do all work required by and in accordance with applicable State and local plumbing codes; shall arrange for all permits, inspections, and tests required by those codes; and shall do everything necessary to provide complete systems which will be ready for use without further expense to the Owner.

B. Work and materials shall conform to applicable codes, utility company standards, and the rules and regulations of authorities having jurisdiction.

C. Should work or material called for in the specification not conform to the requirements of the previous paragraphs, above, the Contractor shall so notify the Engineer when submitting his proposal. Failing to do this, the Contractor shall comply with these requirements at his own expense.
1.05 REFERENCES:

A. The following standards form a part of this specification:

American Society for Testing and Materials (ASTM)

<table>
<thead>
<tr>
<th>ASTM</th>
<th>Specification</th>
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<tbody>
<tr>
<td>A53</td>
<td>Specification for Welded and Seamless Steel Pipe</td>
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<tr>
<td>A120</td>
<td>Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Ordinance Uses</td>
</tr>
<tr>
<td>A72</td>
<td>Specification for Welded Wrought Iron Pipe</td>
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<tr>
<td>A74</td>
<td>Specification for Hub and Spigot Cast Iron Soil Pipe and Fittings</td>
</tr>
<tr>
<td>A167</td>
<td>Specification for Stainless and Heat-Resisting Chromium - Nickel Steel Plate, Sheet and Strip</td>
</tr>
<tr>
<td>B62</td>
<td>Specification for Composition Bronze Ounce Metal Castings</td>
</tr>
<tr>
<td>B88</td>
<td>Specification for Seamless Copper Water Tube</td>
</tr>
<tr>
<td>C564</td>
<td>Standard Specifications for Rubber Gaskets for Cast Iron soil Pipe and Fittings</td>
</tr>
<tr>
<td>D3034</td>
<td>Specification for Type PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings</td>
</tr>
<tr>
<td>D3212</td>
<td>Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals</td>
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American National Standards Institute (ANSI)

<table>
<thead>
<tr>
<th>ANSI</th>
<th>Specification</th>
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<tbody>
<tr>
<td>B16.3</td>
<td>Malleable-Iron Screwed Fittings 150 and 300 lb.</td>
</tr>
<tr>
<td>B16.12</td>
<td>Cast Iron Screwed Drainage Fittings</td>
</tr>
<tr>
<td>B16.26</td>
<td>Cast Bronze Fittings for Flared Copper Tubes</td>
</tr>
<tr>
<td>B16.18</td>
<td>Cast Bronze Solder-Joint Pressure Fittings</td>
</tr>
<tr>
<td>B16.22</td>
<td>Wrought Copper and Bronze Solder-Joint Pressure Fittings</td>
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</table>

American Water Works Associations (AWWA)

<table>
<thead>
<tr>
<th>AWWA</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>C651</td>
<td>Standard for Disinfecting Water Mains</td>
</tr>
</tbody>
</table>
1.06 SUBMITTALS: IN ACCORDANCE WITH REQUIREMENTS OF GENERAL SPECIFICATIONS, SUBMIT THE FOLLOWING:

A. Shop drawings shall consist of manufacturer's scale drawings, cuts, or catalogs, including descriptive literature and complete characteristics, code requirements, and motor drive. Shop drawings shall be identified by name and number of equipment, as indicated on contract drawings or in the specification. Catalog data submitted without proper identification of model number or type will not be accepted or acted upon by the Engineer. Information on shop drawings which applies to models or systems which are not to be provided hereunder and which does not specifically apply to the item submitted shall be deleted.

B. Shop drawings of the following equipment and materials shall be submitted for review:

- Pipe and fittings
- Valves
- Meter setters
- Flange conversion kits

PART 2 - PRODUCTS

2.01 MATERIALS:

A. PIPE AND FITTINGS:

1. All pipe and fittings shall conform to the listed ASTM, ANSI and NSF Specifications as applicable, unless otherwise indicated.

2. All water piping in buildings shall be Type L, drawn, copper water tubing.

B. WATER VALVES:

1. All 5/8-inch through 2-inch inlet valves shall be of the ball type design supplied with handles. All valves shall be constructed of waterworks brass per ASTM B-62 and certified by the latest revision of NSF 61 and NSF 372 where applicable.
2. The ball valves shall contain a ball that rotates within two Buna-N rubber seats. The brass shall be no lead bronze and conform to the latest revisions of NSF 61 and NSF 372 where applicable. The valve must contain two Buna-N "O" rings in the stem to assure a permanent watertight seal at the top. The valve shall be constructed of a solid piece tee-head and stem. The valve handle shall be constructed of waterworks brass per ASTM B-62, and shall conform to the latest revision of NSF 61 & NSF 372 where applicable.

3. The valve must be non-directional and designed to withstand a working pressure of up to 300 psi.

   - The valve must be available in all of the following end configurations:
   - Meter connection x Compression
   - Female Iron Pipe x Compression
   - Male Iron Pipe x Compression
   - Compression x Compression

4. The compression ends must include: CTS, IP, PET, PEP, and PCV. The compression end of the CTS, PET, and Class 250 PBT or PEP transition coupling shall have a Buna-N gasket for a watertight seal, and a bronze split ring to ensure a mechanical seal and lock on the pipe.

C. METER SETTERS:

1. Meter setters (or horns as required for particular situations) shall be designed for installation close to the cellar wall, in a corner, or to change a meter orientation from vertical to horizontal, right or left fit, and shall include compression couplings for quick, watertight, connections to existing piping without threading, flaring, or soldering existing piping.

2. The meter setting equipment must have fully interchangeable couplings for the meter sizes 5/8-inch through 1-inch. The meter setting compression couplings must provide for the following services and types:

   - Copper Tubing: 1/2-inch, 3/4-inch, 1-inch, 1-1/4-inch, 1-1/2-inch, and 2-inch.

3. All materials used in the construction of the meter setter and the meter setter couplings shall be comprised of one of the following materials:

   - Copper: ASTM B-88, NSF 61 Certified
   - Bronze: ASTM B-62 (AWWA C800), NSF 61 Certified
   - Gaskets and "O" Rings: Buna-N.

4. The meter setter body shall consist of bent copper tubing with spun rolled flanges and nuts connected to a cast bronze fitting in such a manner as to make the unit rigid. The bent copper tubing shall be soldered to the cast bronze fitting with lead-
All copper tubing shall meet or exceed ASTM B-88. The tubing minimum size for meter sizes 5/8-inch, 5/8-inch by 3/4-inch, and 3/4-inch shall be 13/16-inch. The tubing minimum size for the 1-inch meter size shall be 15/16-inch. The cast bronze fitting shall provide for the bent copper tubing and shall have separate water ways for the inlet and outlet. The inlet and outlet connections shall have fine threads for mechanical continuity and an "O"-ring face seal to ensure a watertight connection.

5. Meter setter compression couplings shall be designed for quick, watertight, connections. All gaskets shall be made of Buna-N. All meter setter connection threads shall be fine thread for direct connection to the meter setter.

6. All meter setters shall be installed only at the written direction of the Owner or Engineer.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. PIPE AND FITTINGS:

1. All piping shall be installed in a neat, workmanlike manner, and the various lines shall be parallel to building walls wherever possible. Piping shall be installed to accurate lines and grades, and shall be supported by hangers of the type and spacing hereinafter specified. Where temporary supports are used, they shall be sufficiently rigid to prevent shifting or distortion of the pipe. Suitable provision shall be made for expansion where necessary.

2. Before assembly, all dirt and chips shall be removed from inside the pipe and fittings and from the threads.

3. After being cut to final lengths, the ends of copper tubing shall be reamed to remove burrs.

4. Threads of all screwed joints shall be clean-cut and of long taper. Screwed joints shall be made up with an approved pipe joint compound applied to the male threads only.

5. All pipe connected to recessed drainage fitting shall be screwed against the shoulder of the fittings.

6. Pipe-joint compound, for pipe carrying flammable or toxic gas, must bear the approval of the Underwriter's Laboratories or Factory Mutual Engineering Division.

7. No close nipples will be allowed.
8. Solder joints for copper tubing shall be prepared by cleaning the ends of the tubing and the inner surfaces of the fittings with steel wool until they are bright. The cleaned surface shall be given a thin coating of approved non-lead soldering flux, and the tubing end inserted into the fittings as far as possible. Heating and finishing of the joint shall be done in accordance with the recommendations of the manufacturer of the fittings, using solid string or wire solder with no more than 0.2 percent lead. Solder shall be 95 percent tin and 5 percent antimony, or other approved composition. The use of cored solder will not be permitted.

9. A sufficient number of unions shall be used to allow for the dismantling of all water pipe, valves, and equipment. Unions shall be 250 WSP and shall be made of brass or bronze for joining nonferrous pipe and malleable iron or steel with brass or bronze seats for joining ferrous pipe. In vent piping, Tucker connections shall be used instead of unions.

10. Where ferrous pipes join nonferrous pipes carrying liquid either underground or elsewhere, such as at electric water heaters, dielectric bushings or unions shall be used to make the joint.

3.02 QUALITY ASSURANCE:

A. Upon completion of installation, all pipelines shall be tested by the Contractor in the presence of the Engineer or the plumbing or building inspector, and in accordance with the requirements of local or applicable plumbing or building code.

B. Piping located underground shall be tested before being backfilled. Piping to be insulated or painted shall be tested before the insulation or paint is applied. Portions of piping that will be concealed before completion shall be tested separately in the same manner as described below for the entire pipeline.

C. All materials, equipment, tools and labor for testing shall be furnished by the Contractor.

D. Piping which carries water or liquid under pressure shall be filled with water and subjected to a pressure of 125 psig. or 1-1/2 times the normal working pressure, whichever is greater, for a period of two hours or longer as may be necessary to examine the piping for leaks.

E. Should leaks be found, faulty joints shall be repaired, even to the extent of disassembling and remaking the joint. Caulking of threads or the use of chemical compounds to correct leaks will not be permitted. The Contractor shall replace defective pipe or fittings, and the tests shall be repeated until test requirements are met to the satisfaction of the Engineer.

END OF SECTION
Awarding Authority: City of Quincy, MA
Contract Number: QUINCY
City/Town: QUINCY

Description of Work: Replacement of 130 lead water services throughout the City and the complete restoration of public and private property to pre-construction conditions.

Job Location: Quincy, MA

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

• This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the “Wage Request Number” on all pages of this schedule.
• An Awarding Authority must request an updated wage schedule from the Department of Labor Standards ("DLS") if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule. For CM AT RISK projects (bid pursuant to G.L. c.149A), the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work must be within 90-days of the wage schedule issuance date.
• The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. The wage schedule shall be made a part of the contract awarded for the project. The wage schedule must be posted in a conspicuous place at the work site for the life of the project in accordance with M.G.L. c. 149 § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project whether they are employed by the prime contractor, a filed sub-bidder, or any sub-contractor.
• All apprentices working on the project are required to be registered with the Massachusetts Department of Labor Standards, Division of Apprentice Standards (DLS/DAS). Apprentice must keep his/her apprentice identification card on his/her person during all work hours on the project. An apprentice registered with DAS may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. Any apprentice not registered with DLS/DAS regardless of whether or not they are registered with any other federal, state, local, or private agency must be paid the journeyworker's rate for the trade.
• The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule. Awarding authorities are required to request these updates no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor. For multi-year CM AT RISK projects, awarding authority must request an annual update no later than two weeks before the anniversary date, determined as the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to permit procurement of construction services. Contractors are required to obtain the wage schedules from awarding authorities, and to pay no less than these rates to covered workers. The annual update requirement is not applicable to 27F “rental of equipment” contracts.
• Every contractor or subcontractor which performs construction work on the project is required to submit weekly payroll reports and a Statement of Compliance directly to the awarding authority by mail or email and keep them on file for three years. Each weekly payroll report must contain: the employee’s name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. A sample of a payroll reporting form may be obtained at http://www.mass.gov/dols/pw.
• Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
• Employees not receiving the prevailing wage rate set forth on the wage schedule may report the violation to the Fair Labor Division of the office of the Attorney General at (617) 727-3465.
• Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and
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For apprentice rates see "Apprentice- PILE DRIVER"
For apprentice rates see "Apprentice- LABORER"
For apprentice rates see "Apprentice- OPERATING ENGINEERS"
For apprentice rates see "Apprentice- LABORER"
For apprentice rates see "Apprentice- LABORER"
## BOILERMAKER - Local 29

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### Notes:
- Apprentice to Journeyworker Ratio: 1:5

### BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)
- Issue Date: 08/01/2016
- Wage Request Number: 20161214-033
- BRICKLAYERS LOCAL 3 (QUINCY)

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Notes:

- Apprentice to Journeyworker Ratio: 1:5

BULLDOZER/GRADER/SCRAPER OPERATING ENGINEERS LOCAL 4

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### Carpenter - Zone 2 Eastern MA

**Effective Date -** 09/01/2016

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**Notes:**

Apprentice to Journeyworker Ratio: 1:5

### Cement Masonry/Plastering

**Bricklayers Local 3 (Quincy)**

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**Issue Date:** 12/14/2016  **Wage Request Number:** 20161214-033  **Page 5 of 32**
### Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (Quincy)

#### Effective Date - 07/01/2016

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**Notes:**
- Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.
- Apprentice to Journeyworker Ratio: 1:3

### CHAIN SAW OPERATOR

**LABORERS - ZONE 1**

For apprentice rates see "Apprentice- LABORER"

| 12/01/2016 | $37.10 | $7.45 | $13.80 | $0.00 | $58.35 |

### CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES

**OPERATING ENGINEERS LOCAL 4**

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

| 12/01/2016 | $46.38 | $10.00 | $15.25 | $0.00 | $71.63 |
| 06/01/2017 | $47.38 | $10.00 | $15.25 | $0.00 | $72.63 |
| 12/01/2017 | $48.38 | $10.00 | $15.25 | $0.00 | $73.63 |

### COMPRESSOR OPERATOR

**OPERATING ENGINEERS LOCAL 4**

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

| 12/01/2016 | $31.17 | $10.00 | $15.25 | $0.00 | $56.42 |
| 06/01/2017 | $31.86 | $10.00 | $15.25 | $0.00 | $57.11 |
| 12/01/2017 | $32.55 | $10.00 | $15.25 | $0.00 | $57.80 |

### DELEADER (BRIDGE)

**PAINTERS LOCAL 35 - ZONE 2**

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

| 07/01/2016 | $50.46 | $7.85 | $16.10 | $0.00 | $74.41 |
| 01/01/2017 | $51.41 | $7.85 | $16.10 | $0.00 | $75.36 |
### Apprentice - PAINTER Local 35 - BRIDGES/TANKS

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**Notes:**
Steps are 750 hrs.

Apprentice to Journeyworker Ratio: 1:1

**DEMO: ADZEMAN**

LABORERS - ZONE 1

For apprentice rates see "Apprentice- LABORER"

12/01/2015 $35.50 $7.45 $13.55 $0.00 $56.50

**DEMO: BACKHOE/LOADER/HAMMER OPERATOR**

LABORERS - ZONE 1

For apprentice rates see "Apprentice- LABORER"

12/01/2015 $36.50 $7.45 $13.55 $0.00 $57.50

**DEMO: BURNERS**

LABORERS - ZONE 1

For apprentice rates see "Apprentice- LABORER"

12/01/2015 $36.25 $7.45 $13.55 $0.00 $57.25

**DEMO: CONCRETE CUTTER/SAWYER**

LABORERS - ZONE 1

For apprentice rates see "Apprentice- LABORER"

12/01/2015 $36.50 $7.45 $13.55 $0.00 $57.50

**DEMO: JACKHAMMER OPERATOR**

LABORERS - ZONE 1

For apprentice rates see "Apprentice- LABORER"

12/01/2015 $36.25 $7.45 $13.55 $0.00 $57.25

**DEMO: WRECKING LABORER**

LABORERS - ZONE 1

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**Notes:**
- App Prior 1/1/03; 30/35/40/45/50/55/65/70/75/80
- Apprentice to Journeyworker Ratio: 2:3***

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### ELEVATOR CONSTRUCTOR

**ELEVATOR CONSTRUCTORS LOCAL 4**

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| Effective Date - 01/01/2017        |                         |           |        |         |                           |            |
| Step 1, 50                        |                         |           |        |         |                           |            |
| 2                                 | $27.93                  | $15.28    | $0.00  | $15.71  | $0.00                     | $43.21     |
| 3                                 | $30.72                  | $15.28    | $15.71 | $0.00   | $0.00                     | $61.71     |
| 4                                 | $36.31                  | $15.28    | $15.71 | $0.00   | $0.00                     | $67.30     |
| 5                                 | $39.10                  | $15.28    | $15.71 | $0.00   | $0.00                     | $70.09     |
| 6                                 | $44.69                  | $15.28    | $15.71 | $0.00   | $0.00                     | $75.68     |

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

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

---

**ELEVATOR CONSTRUCTOR HELPER**

ELEVATOR CONSTRUCTORS LOCAL 4

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<th>Pension</th>
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For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

**FENCE & GUARD RAIL ERECTOR**

LABORERS - ZONE 1

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For apprentice rates see "Apprentice - LABORER"

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

OPERATING ENGINEERS LOCAL 4

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For apprentice rates see "Apprentice - OPERATING ENGINEERS"

**FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY**

OPERATING ENGINEERS LOCAL 4

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For apprentice rates see "Apprentice - OPERATING ENGINEERS"

**FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY**

OPERATING ENGINEERS LOCAL 4

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For apprentice rates see "Apprentice - OPERATING ENGINEERS"
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### Apprentice - FLOORCOVERER - Local 2168 Zone 1

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<th>Apprentice Base Wage</th>
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<th>Pension</th>
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**Notes:**
- Steps are 750 hrs.

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

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**Issue Date:** 12/14/2016  **Wage Request Number:** 20161214-033
### GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS)

**GLAZIERS LOCAL 35 (ZONE 2)**

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#### Apprentice - GLAZIER - Local 35 Zone 2

**Effective Date** - 07/01/2016

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#### Effective Date - 01/01/2017

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**Notes:**

Steps are 750 hrs.

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

### HOISTING ENGINEER/CRAVES/GRADALLS

**OPERATING ENGINEERS LOCAL 4**

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## Apprentice - OPERATING ENGINEERS - Local 4

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### Notes:

- Apprentice to Journeyworker Ratio: 1:6

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### HVAC (DUCTWORK)

**SHEETMETAL WORKERS LOCAL 17 - A**

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For apprentice rates see "Apprentice- SHEET METAL WORKER"

### HVAC (ELECTRICAL CONTROLS)

**ELECTRICIANS LOCAL 103**

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For apprentice rates see "Apprentice- ELECTRICIAN"

### HVAC (TESTING AND BALANCING - AIR)

**SHEETMETAL WORKERS LOCAL 17 - A**

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For apprentice rates see "Apprentice- SHEET METAL WORKER"
## HVAC (TESTING AND BALANCING -WATER)

**PIPFITTERS LOCAL 537**

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

## HVAC MECHANIC

**PIPFITTERS LOCAL 537**

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

## HYDRAULIC DRILLS

**LABORERS - ZONE 1**

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For apprentice rates see "Apprentice- LABORER"

## INSULATOR (Pipes & Tanks)

**HEAT & FROST INSULATORS LOCAL 6 (BOSTON)**

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

### Apprentice -

**Effective Date -** 09/01/2016

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### Effective Date - 09/01/2017

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**Notes:**
- Steps are 1 year
- Apprentice to Journeyworker Ratio: 1:4

## IRONWORKER/WELDER

**IRONWORKERS LOCAL 7 (BOSTON AREA)**

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### Ironworker - Local 7 Boston

**Apprentice -**

**Effective Date:** 09/16/2016

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**Effective Date:** 03/16/2017

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**Notes:**

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

**Apprentice to Journeyworker Ratio:**

- **JACKHAMMER & PAVING BREAKER OPERATOR**
  - LABORERS - ZONE 1
  - Effective Date: 12/01/2016
  - Rate: $37.10
  - Health: $7.45
  - Pension: $13.80
  - Supplemental Unemployment: $0.00
  - Total Rate: $58.35

- **LABORER**
  - LABORERS - ZONE 1
  - Effective Date: 12/01/2016
  - Rate: $36.85
  - Health: $7.45
  - Pension: $13.80
  - Supplemental Unemployment: $0.00
  - Total Rate: $58.10

- **LABORER - Zone 1**
  - Apprentice -
  - Effective Date: 12/01/2016
  - Rate: $22.11
  - Health: $7.45
  - Pension: $13.80
  - Supplemental Unemployment: $0.00
  - Total Rate: $43.36

**Notes:**

**Apprentice to Journeyworker Ratio:**

- **LABORER - CARPENTER TENDER**
  - LABORERS - ZONE 1
  - Effective Date: 12/01/2016
  - Rate: $36.85
  - Health: $7.45
  - Pension: $13.80
  - Supplemental Unemployment: $0.00
  - Total Rate: $58.10

- **LABORER - CEMENT FINISHER TENDER**
  - LABORERS - ZONE 1
  - Effective Date: 12/01/2016
  - Rate: $36.85
  - Health: $7.45
  - Pension: $13.80
  - Supplemental Unemployment: $0.00
  - Total Rate: $58.10
<table>
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### MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile

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**Effective Date:** 08/01/2016

### Effective Date: 02/01/2017

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

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### MECH. SWEEPER OPERATOR (ON CONST. SITES)

**OPERATING ENGINEERS LOCAL 4**

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**For apprentice rates see "Apprentice- OPERATING ENGINEERS"**

### MECHANICS MAINTENANCE

**OPERATING ENGINEERS LOCAL 4**

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**For apprentice rates see "Apprentice- OPERATING ENGINEERS"**

### MILLWRIGHT (Zone 1)

**MILLWRIGHTS LOCAL 1121 - Zone 1**

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**Notes:**
- Steps are 2,000 hours

### MILLWRIGHT - Local 1121 Zone 1

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**Notes:**
- Apprentice to Journeyworker Ratio: 1:5
### Classification

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

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**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:** 1:1
### PAINTER (SPRAY OR SANDBLAST, NEW)

* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.

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### Apprentices - PAINTER Local 35 Zone 2 - Spray/Sandblast - New

**Effective Date** - 07/01/2016

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**Effective Date** - 01/01/2017

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**Notes:**

Steps are 750 hrs.

Apprentice to Journeyworker Ratio: 1:1

### PAINTER (SPRAY OR SANDBLAST, REPAINT)

**Effective Date** - 07/01/2016

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**Effective Date** - 01/01/2017

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

**Effective Date -** 07/01/2016

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**Effective Date -** 01/01/2017

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**Notes:**

- Steps are 750 hrs.

Apprentice to Journeyworker Ratio: 1:1

---

**PAINTER (TRAFFIC MARKINGS)**

12/01/2016 $36.85 $7.45 $13.80 $0.00 $58.10

For Apprentice rates see "Apprentice - LABORER"

**PAINTER / TAPER (BRUSH, NEW) **

* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.

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

**Effective Date -** 07/01/2016

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**Notes:**
- Steps are 750 hrs.

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

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PAINTER / TAPER (BRUSH, REPAINT)

*PAINTERS LOCAL 35 - ZONE 2*

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01/01/2017  $38.97  $7.85  $16.10  $0.00  $62.92
## Apprentices - *PAINTER Local 35 Zone 2 - BRUSH REPAINT*

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### Notes:
- Steps are 750 hrs.

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

## Classification - *TEAMSTERS JOINT COUNCIL NO. 10 ZONE A*

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Notes:
- Apprentice to Journeyworker Ratio: 1:3

PIPFITTER & STEAMFITTER

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Notes:
- Apprentice to Journeyworker Ratio: 1:3

PIPELAYER

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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: **

For apprentice rates see "Apprentice- LABORER"

Issue Date: 12/14/2016  Wage Request Number: 20161214-033
## Classification

### Apprentice - PLUMBER/GASFITTER - Local 12

#### Effective Date - 09/01/2016

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### Notes:

**1.2; 2.6; 3.10; 4.14; 5.19/Steps are 1 yr
Step4 with lic$58.50 Step5 with lic$65.36**

### Apprentice to Journeyworker Ratio:

**PNEUMATIC CONTROLS (TEMP.)**

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

**PNEUMATIC DRILL/TOOL OPERATOR**

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For apprentice rates see "Apprentice- LABORER"

**POWDERMAN & BLASTER**

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For apprentice rates see "Apprentice- LABORER"

**POWER SHOVEL/DERRICK/TRENCHING MACHINE**

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

**PUMP OPERATOR (CONCRETE)**

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

**PUMP OPERATOR (DEWATERING, OTHER)**

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

**READY MIX CONCRETE DRIVERS after 4/30/10**

(Drivers Hired After 4/30/2010) TEAMSTERS LOCAL 25b

<table>
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**Issue Date:** 12/14/2016  
**Wage Request Number:** 20161214-033  
**Page 24 of 32**
Classification          Effective Date  Base Wage  Health  Pension  Supplemental Unemployment  Total Rate
READY-MIX CONCRETE DRIVER  07/01/2016  $29.33  $8.23  $9.31  $0.00  $46.87
TEAMSTERS LOCAL 25b  05/01/2017  $29.48  $8.23  $9.72  $0.00  $47.43
  07/01/2017  $29.48  $8.48  $9.72  $0.00  $47.68
RECLAIMERS  12/01/2016  $44.94  $10.00  $15.25  $0.00  $70.19
OPERATING ENGINEERS LOCAL 4  06/01/2017  $45.93  $10.00  $15.25  $0.00  $71.18
  12/01/2017  $46.92  $10.00  $15.25  $0.00  $72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"

RESIDENTIAL WOOD FRAME (All Other Work)  06/01/2016  $25.32  $9.80  $16.82  $0.00  $51.94
CARPENTERS-ZONE 2 (Residential Wood)
RESIDENTIAL WOOD FRAME CARPENTER **  10/01/2016  $25.69  $7.07  $7.18  $0.00  $39.94
** The Residential Wood Frame Carpenter classification applies only to the construction of new, wood frame residences that do not exceed four stories including the basement. CARPENTERS-ZONE 2 (Residential Wood)
  04/01/2017  $26.31  $7.07  $7.18  $0.00  $40.56
  10/01/2017  $26.93  $7.07  $7.18  $0.00  $41.18
  04/01/2018  $27.35  $7.07  $7.18  $0.00  $41.60
  10/01/2018  $27.77  $7.07  $7.18  $0.00  $42.02
  04/01/2019  $28.20  $7.07  $7.18  $0.00  $42.45
  10/01/2019  $28.63  $7.07  $7.18  $0.00  $42.88
As of 9/1/09 Carpentry work on wood-frame residential WEATHERIZATION projects shall be paid the RESIDENTIAL WOOD FRAME CARPENTER rate.

### Apprentice - CARPENTER (Residential Wood Frame) - Zone 2

**Effective Date -** 10/01/2016

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**Effective Date -** 04/01/2017

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Notes:

Apprentice to Journeyworker Ratio: 1:5
### RIDE-ON MOTORIZED BUGGY OPERATOR

**LABORERS - ZONE 1**

For apprentice rates see "Apprentice- LABORER"

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### ROLLER/SPREADER/MULCHING MACHINE

**OPERATING ENGINEERS LOCAL 4**

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

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### ROOFER (Inc.Roofer Waterproofing &Roofer Damproofing)

**ROOFERS LOCAL 33**

For apprentice rates see "Apprentice- ROOFER"

<table>
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#### Apprentice - ROOFER - Local 33

**Effective Date - 08/01/2016**

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**Effective Date - 02/01/2017**

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**Notes:**
- **1**: 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.

**Apprentice to Journeyworker Ratio:**

### ROOFER SLATE / TILE / PRECAST CONCRETE

**ROOFERS LOCAL 33**

For apprentice rates see "Apprentice- ROOFER"

<table>
<thead>
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### SHEETMETAL WORKER

**SHEETMETAL WORKERS LOCAL 17 - A**

For apprentice rates see "Apprentice- ROOFER"

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### SHEET METAL WORKER - Local 17-A

**Effective Date: 11/01/2016**

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**Notes:**
- Steps are 6 mos.

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

SIGN ERECTOR

**PAINTERS LOCAL 35 - ZONE 2**

06/01/2013 | $25.81 | $7.07 | $7.05 | $0.00 | $39.93

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**Issue Date:** 12/14/2016  **Wage Request Number:** 20161214-033  **Page 27 of 32**
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Notes:
Steps are 4 mos.

Apprentice to Journeyworker Ratio: 1:1

**SPECIALIZED EARTH MOVING EQUIP < 35 TONS**
TEAMSTERS JOINT COUNCIL NO. 10 ZONE A

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**SPECIALIZED EARTH MOVING EQUIP > 35 TONS**
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**SPRINKLER FITTER**
SPRINKLER FITTERS LOCAL 550 - (Section A) Zone 1

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

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**Notes:** Apprentice entered prior 9/30/10: 40/45/50/55/60/65/70/75/80/85
Steps are 850 hours

Apprentice to Journeyworker Ratio: 1:3

### STEAM BOILER OPERATOR
**OPERATING ENGINEERS LOCAL 4**

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

### TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

### TELECOMMUNICATION TECHNICIAN
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**Notes:**

Apprentice to Journeyworker Ratio: 1:1

### TERRAZZO FINISHERS

**BRICKLAYERS LOCAL 3 - MARBLE & TILE**

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**Issue Date:** 12/14/2016  
**Wage Request Number:** 20161214-033  
**Page 30 of 32**
### Apprentices - TERRAZZO FINISHER - Local 3 Marble & Tile

#### Effective Date - 08/01/2016

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### Notes:

Apprentice to Journeyworker Ratio: 1:3

**TEST BORING DRILLER**  
LABORERS - FOUNDATION AND MARINE  
12/01/2016 $38.20 $7.45 $14.00 $0.00 $59.65

For apprentice rates see "Apprentice- LABORER"

**TEST BORING DRILLER HELPER**  
LABORERS - FOUNDATION AND MARINE  
12/01/2016 $36.92 $7.45 $14.00 $0.00 $58.37

For apprentice rates see "Apprentice- LABORER"

**TEST BORING LABORER**  
LABORERS - FOUNDATION AND MARINE  
12/01/2016 $36.80 $7.45 $14.00 $0.00 $58.25

For apprentice rates see "Apprentice- LABORER"

**TRACTORS/PORTABLE STEAM GENERATORS**  
OPERATING ENGINEERS LOCAL 4  
12/01/2016 $44.94 $10.00 $15.25 $0.00 $70.19

06/01/2017 $45.93 $10.00 $15.25 $0.00 $71.18

12/01/2017 $46.92 $10.00 $15.25 $0.00 $72.17

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

**TRAILERS FOR EARTH MOVING EQUIPMENT**  
TEAMSTERS JOINT COUNCIL NO. 10 ZONE A  
12/01/2016 $34.12 $10.91 $10.89 $0.00 $55.92

**TUNNEL WORK - COMPRESSED AIR**  
LABORERS (COMPRESSED AIR)  
12/01/2016 $49.08 $7.45 $14.40 $0.00 $70.93

**TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE)**  
LABORERS (COMPRESSED AIR)  
12/01/2016 $51.08 $7.45 $14.40 $0.00 $72.93

**TUNNEL WORK - FREE AIR**  
LABORERS (FREE AIR TUNNEL)  
12/01/2016 $41.15 $7.45 $14.40 $0.00 $63.00

**TUNNEL WORK - FREE AIR (HAZ. WASTE)**  
LABORERS (FREE AIR TUNNEL)  
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For apprentice rates see "Apprentice- LABORER"
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For apprentice rates see "Apprentice- LABORER" or "Apprentice- OPERATING ENGINEERS"

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, 1:2, 2:3, 3:4, 4:5, 5:6, 6:7, 7:8, 8:9, 9:10, 10:11, 11:12, 12:13, 13:14, etc.

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

LIST OF LEAD WATER SERVICES
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Special Considerations Key:
- DCR: Massachusetts Department of Conservation & Recreation (DCR) Roadway, Work shall be in accordance with construction access permit
- Env.Pro: Environmentally sensitive site, environmental protection required
- LCR: Lead & Copper Rule sample site, shall not be replaced until after September 1, 2017
- MWRA-w: Massachusetts Water Resource Authority - Water infrastructure, work shall be in accordance with 8(m) permit
- MWRA-ww: Massachusetts Water Resource Authority - Waste Water infrastructure, work shall be in accordance with 8(m) permit
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<th>Type of Replacement (Full/Partial)</th>
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Total Full Replacements 59
Total Partial - Non-Private Replacements 3
Total Partial - Private Replacements 69
Total Replacements 131
APPENDIX C:

CONSTRUCTION DETAILS
LEAD SERVICE LINE REPLACEMENT PROGRAM
DEPARTMENT OF PUBLIC WORKS
CITY OF QUINCY, MASSACHUSETTS

STANDARD DETAILS

D-1

PAMBLY Replacement Detail

Pave Type: Concrete Block

FLAT TYPE OF CONCRETE BLOCK

TRENCH PAVEMENT DETAIL

NOTE:
1. See Section 402 for Pavement Scheduling.
2. For All Trench Pavement Types, the Concrete Base shall be a Minimum of 6" thick.
3. Concrete shall be a minimum of 3000 psi.
4. Concrete shall be a minimum of 3000 psi.
5. Concrete shall be a minimum of 3000 psi.

WATER SERVICE TRENCH DETAIL

NOTE:
1. Trench shall be placed at the Unit of Road on Pave Brick Parkway, as specified by City Permit.
2. Trench shall be placed at the Unit of Road on Pave Brick Parkway, as specified by City Permit.
3. Trench shall be placed at the Unit of Road on Pave Brick Parkway, as specified by City Permit.
4. Trench shall be placed at the Unit of Road on Pave Brick Parkway, as specified by City Permit.
5. Trench shall be placed at the Unit of Road on Pave Brick Parkway, as specified by City Permit.

CATCH BASIN PROTECTION DETAIL

NOTE:
1. Concrete Curb and Gutter to be placed in accordance with specified widths.
2. Concrete Curb and Gutter to be placed in accordance with specified widths.
3. Concrete Curb and Gutter to be placed in accordance with specified widths.
4. Concrete Curb and Gutter to be placed in accordance with specified widths.
5. Concrete Curb and Gutter to be placed in accordance with specified widths.

SINGLE COMPOST FILTER TUBE DETAIL

NOTE:
1. Compost Filter Tubes to be placed in accordance with specified widths.
2. Compost Filter Tubes to be placed in accordance with specified widths.
3. Compost Filter Tubes to be placed in accordance with specified widths.
4. Compost Filter Tubes to be placed in accordance with specified widths.
5. Compost Filter Tubes to be placed in accordance with specified widths.