

**PLUM ISLAND HYDRANT  
REPLACEMENT  
PROJECT  
Invitation for Bids  
FOR THE  
CITY OF NEWBURYPORT**

**MAY 2017**



**CONTRACT # 2017-DPS-009**

**CITY OF NEWBURYPORT  
DEPARTMENT OF PUBLIC SERVICES  
16A PERRY WAY  
NEWBURYPORT, MA, 01950  
(978) 465-4464**

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## INVITATION FOR BIDS

### Section A

Sealed bids for furnishing the following LABOR AND MATERIALS will be received at the Department of Public Services, through an Electronic Bidding Process hosted by [www.projectdog.com](http://www.projectdog.com), until the time specified below at which time the bids will be publicly released online for review by all.

#### ITEM

#### BID OPENING

Bid: Plum Island Hydrant Replacement Project

**June 22, 2017 at 10:00am**

In general, this contract consists of replacing an estimated 145 fire hydrants and assemblies and installing an estimated 63 new isolation valves during the first two years of this three year contract and installing permanent paving at these work areas in year three of this contract. For Plum Island Turnpike hydrants, installation of a bypass will be needed. The hydrant assemblies will include but not limited to, a hydrant, a valve, piping and fitting. All ductile iron piping will be wrapped in Polyethylene, all nuts and bolts will be stainless steel and tapped wrapped to provide maximum corrosion protection. The shuts-downs will be limited to the zones outlined in the plan and determined by the City. There will be a pre-bid conference on Tuesday **June 6, 2017 at 10am** at the Office of Water and Sewer 16C Perry Way, Newburyport. **The estimated value of this contract is \$1,800,000.**

It is anticipated that the work associated with this contract will take three construction seasons. This contract will be effective on the date specified in a Notice to Proceed and will expire on **June 15, 2020.**

### **This contract is being Electronically Bid.**

Hard copy bids will not be accepted by the Awarding Authority. Bids are electronically available at [www.projectdog.com](http://www.projectdog.com) and must also be submitted electronically at [www.projectdog.com](http://www.projectdog.com). Call Projectdog, Inc. at 978-499-9014 for assistance Monday – Friday 8:30am-5pm. Tutorial, instructions and videos on how to complete the electronic bid documents are available online.

Invitation for bids contract, bid forms, construction specifications, and general construction conditions will be available online from the [www.projectdog.com](http://www.projectdog.com) website starting **May 26, 2017 at 10am.** **Use project code 818586.** To obtain **free** bidding documents, go to the Projectdog website at [www.projectdog.com](http://www.projectdog.com) and click “Sign Up” or login with your existing account. This service is **free** and you will not be charged to receive or submit your bid.

Bidders may obtain one full paper bid set of Contract Project Documents from Projectdog for a refundable deposit of \$75.00 made payable to Projectdog in the form of certified check or money order. The full amount of the deposit will be refunded to all responsive bidders returning the Contract Project Documents in good condition within ten (10) days after date of general bid opening. Otherwise, the deposit will become the property of Projectdog, Inc. Bidders requesting their refundable paper bid set of Construction Project Documents be mailed must supply an additional non-refundable shipping and handling fee of \$50.00 payable to Projectdog.

Once you have registered your company with the Projectdog web bidding hosting site, you will be able to request the bid and submit your bid. **Enter Project Code 818586** in the project locator box. Select “Acquire Documents” to download the IFB. Questions regarding the website or project distribution should be directed to Projectdog at 978-499-9014.

All Addenda must be acquired electronically at [www.Projectdog.com](http://www.Projectdog.com). Each individual or firm recorded as having requested a set of Contract Documents will be electronically notified via email when addenda are issued. It is the sole responsibility of the bidder to review all ADDENDA prior to bid opening at [www.Projectdog.com](http://www.Projectdog.com) or at Project's physical location at 18 Graf Road, Suite 8, Newburyport, MA 01950.

Bids will be opened by our online electronic hosting company on **June 22, 2017 at 10:00am**. Each Bid must be accompanied by a bid security consisting of a Bid Bond, Cash, Treasurer's Check, Cashier's Check or Certified Check issued by a responsible bank or trust company in the amount of 5% of the bid price.

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

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

**There will be Pre-bid Conference for this project that will be held at the City of Newburyport Water and Sewer Office located at 16C Perry Way, Newburyport at 10am of June 6, 2017.**

The successful bidder must furnish a 100% Performance Bond and a 100% Payment Bond of the contract sum with a corporate surety approved by the CITY (CITY of Newburyport) and qualified to do business in Massachusetts.

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

The bidder agrees that its bid shall be valid and may not be withdrawn for a period of 30 days, Saturdays, Sundays and legal holidays excluded, after the opening of the bids, and if a contract is awarded to a bidder within that 30-day period, the bidder also agrees that if its bid is one of the three lowest bids, it shall not withdraw its bid until a contract is executed between the CITY and the successful bidder.

Bidders must be aware that to the extent the CITY determines, in its sole discretion, not to execute any portion of the work bid hereunder, based on the CITY not obtaining access to the property necessary for that portion of the work, the contract will be deducted by the portion of the work removed and no lost profits or any other monetary compensation will be due to the contractor.

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

## INSTRUCTIONS TO BIDDERS

### Section B

#### **1B. Receipt and Opening of Bids**

The CITY of Newburyport, Massachusetts, herein called the CITY, acting by and through its Mayor, will receive sealed bids through an on-line electronic bidding process for the project known as **Plum Island Hydrant Replacement Project – Contract # 2017-DPS-009.**

General bids shall be submitted on-line at our bid hosting web site, Projectdog.com by **10:00 a.m. prevailing time, on June 22, 2017**, at which time said bids will be electronically published on the web site for review by all interested parties.

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

#### **2B. Location and Work to be Done**

The work consists of replacing an estimated 145 fire hydrants and assemblies and installing an estimated 63 new isolation valves during the first two years of this three year contract and installing permanent paving at these work areas in year three of this contract. For Plum Island Turnpike hydrants, installation of a bypass will be needed. The hydrant assemblies will include but not limited to, a hydrant, a valve, piping and fitting. All ductile iron piping will be wrapped in Polyethylene, all nuts and bolts will be stainless steel and tape-wrapped to provide maximum corrosion protection. The shutdowns will be limited to the zones outlined in the plan and determined by the City.

It is assumed that one-half of the hydrant replacement work will be completed in year one of this contract, while the other one-half of the hydrant replacement will be completed in year two of this contract, with the final paving completed in year three to allow for any trench settling.

Additional drawings, specifications, or other requirements, or responses to written questions of bidders submitted during the bid phase may be furnished by written addendum to the bid and contract documents from time to time during the bidding period by the CITY or its CITY Representative, and shall then become a part of the bid/Contract Documents.

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

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

All quantities are approximate and do not expressly or by implication agree that the actual quantities will correspond therewith, but the CITY reserves the right to increase or decrease the quantity. An increase or decrease in the quantity for any item shall not be regarded as cause for an increase or decrease in the unit prices.

### **3B. Preparation of Bid**

#### **General**

Each bid must be submitted on the prescribed form. All blank spaces must be filled in. Failure to complete the bid form adequately may result in the disqualification of the bidder. The foregoing notwithstanding, the CITY reserves the right, to the extent permitted by law, to waive any informalities in the bidding.

General bids shall be submitted on-line on the bid hosting web-site, Projectdog, Inc. by **10:00 a.m. prevailing time, on June 22, 2017**, at which time said bids will be electronically published on the web site for review by all interested parties.

All bids shall be accompanied by a bid deposit in a form or forms outlines in section 18B in this IFB. The amount of such bid deposit shall be 5% of the total value of the bid total or for each particular bid item where applicable.

Any Bid may be withdrawn at any time prior to the scheduled closing time for receipt of bids. No bidder may withdraw a bid within 30 days (excluding Saturday, Sundays and Holidays) after the actual date of the opening thereof.

Bidders must thoroughly examine the bid and Contract Documents, including all addenda and requirements for certificates of insurance, bonds, etc. Failure of any bidder to acquaint themselves with the bid and Contract Documents shall in no way release that bidder from the obligations with respect to his/her bid.

By submitting his/her bid, the bidder agrees to execute the Contract, provide insurance certificates and bonds, and to commence work within the time limits stated in the Contract Documents. In the event the successful bidder fails or neglects to execute the Contract and provide certificates and bonds in the prescribed time, the CITY, at its sole option, may determine that the bidder has abandoned the Contract, that his/her proposal and acceptance are null and void and that his/her bid security has been forfeited to the CITY. The CITY may cancel the award to that bidder and re-award the Contract to another.

Bid prices, and to the extent applicable, unit prices, must remain firm for the term of the contract.

#### **Electronically Bid (E-Bid)**

This project is being Electronically Bid (E-Bid). All bids shall be submitted online at [www.Projectdog.com](http://www.Projectdog.com). Hard copy bids will not be accepted by the Awarding Authority. E-Bid tutorials and instructions are available within the specifications and online at [www.Projectdog.com](http://www.Projectdog.com). For assistance, call Projectdog, Inc. at (978)499-9014, M-F 8:30AM-5PM.

- All required bid forms must be submitted in **PDF** format only. The bidder must complete all required signatures either digitally (using Adobe Acrobat) or manually (print, sign and scan as a PDF file).
- Bid Bonds issued by a surety company shall be submitted on the E-Bid page. Bid bonds in the form of cash or check shall be completed and delivered as outlined on the Bid Bond Affidavit form.
- The bidder must enter bid price on the E-Bid form as a whole dollar value only with no punctuation. Sums shall be expressed in both words and figures on the bid form. Note: The E-Bid form will automatically match the word value to the numeric figure entered by the bidder.
- Bidders may save, submit or modify an E-Bid at any time prior to bid close. Once submitted, a bid cannot be edited. To modify a bid the bidder must retract the bid, make any necessary changes, and then submit the bid again. Upon submitting or retracting the bidder will receive a convenience email for informational

purposes only. Bidders are encouraged to contact Projectdog, Inc. at (978)499-9014, M-F 8:30AM-5PM, if an email is not received.

- If a bid is submitted prior to an Addendum being issued, the bidder will receive an automated email for informational purposes only. The bidder must review the addendum, retract the bid, acknowledge all addenda, and submit the bid again. If a bidder fails to acknowledge addenda their bid may be rejected by the Awarding Authority.
- Timely submission of an E-Bid shall be the full responsibility of the Bidder. The server clock is the time of record. It is the bidder's responsibility to review and confirm online that a bid has been submitted and/or retracted and that the bid is 100% true, complete and accurate. All bidders are required to review their submitted E-Bid via the "**View My Bid Package**" link.

#### **4B. Bid Opening Procedure**

**Bids shall be filed electronically on the bid hosting web-site Projectdog, Inc. before the time and date specified in Receipt and Opening of Bids stated above.**

All requirements shall be followed for each filed bid. Bids not meeting all the requirements for timeliness and security will be rejected; bids not meeting signature and addenda requirements will be rejected prior to checking of bid amounts. The foregoing notwithstanding, the CITY reserves the right, to the extent permitted by law, to waive any informalities in the bids.

The bid deposit/security (cash, certified check, treasurer's check or cashier's check) shall be uploaded on the Projectdog, Inc. website and submitted at time of bid submittal.

Bid signatures will be checked.

**All addenda, if any, will be sent by e-mail to all prospective bidders.** All bidders shall include with their bids the written acknowledgment form provided in FORM OF GENERAL BID.

The total dollar amount of each bid will be displayed electronically on the bid hosting web-site Projectdog, Inc. All those present (on-line access) at the bid opening may examine all bids documents after the bid opening. No bid received after the closing time and date established in this Invitation to Bid for the receipt of bids will be considered, regardless of the cause for delay in the receipt of such bid.

#### **5B. Modification**

Any bidder may modify their bid by written communication at any time prior to the scheduled closing time for receipt of bids. The communication must be submitted through our electronic bid hosting web-site Projectdog, Inc. in the same manner as the bid was originally submitted, except that the Contractor / Bidder shall state that the new bid is a modification of the previously submitted bid.

#### **6B. Ability and Experience of Bidder**

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

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



**7B. Conditions of Work**

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

**8B. Addenda and Interpretations**

Addenda may be issued during the bidding period to modify, clarify, or interpret the Specifications and Contract Documents, or for any other appropriate reason. It is intended, but not guaranteed, that such **Addenda shall be e-mailed only by the Awarding Authority to all persons or parties to whom Bid and Contract Documents have been issued (Bidders of Record)**. Failure to receive such Addenda shall in no way relieve any bidder from the execution of its provisions. All bidders are cautioned to verify the number of Addenda that have been issued and to secure any needed copies from the CITY before submitting a bid. It is solely each bidder's responsibility to contact the CITY prior to submitting a bid to ensure that it has received all addenda.

No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally. All information given to bidders other than by means of the plans, specifications, or by written addenda is given informally and shall not be relied upon by the bidder, and shall not be used as the basis of a claim by the bidder against the CITY.

Every request regarding the bid/contract documents, including but not limited to a request for interpretation of such documents, must be sent by e-mail addressed to Jon-Eric White, City Engineer at [JEWhite@CityofNewburyport.com](mailto:JEWhite@CityofNewburyport.com) and to be given consideration must be received at least five days prior to the date fixed for the opening of bids. Any and all responses to such requests, including any interpretations and any supplemental instructions, if given, will be in the form of written addenda which, when issued, will be e-mailed to all prospective bidders (at the respective e-mail furnished by them for such purposes). Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. Each bidder is responsible to contact the CITY before submitting its bid to ensure that it has received all addenda. All addenda so issued shall become part of the Contract Documents.

**9B. Security for Faithful Performance**

Simultaneously with his delivery of the executed Contract, the Contractor shall furnish a construction performance bond and payment bond as security, respectively, for faithful performance of this contract and for the payment of all persons performing labor and materials under this contract, each in the amount equal to 100 percent of the bid price. The surety on such bond or bonds shall be a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the CITY. The bonds shall remain in force for one year after final acceptance of the work by the CITY, unless the CITY, in writing, releases the Contractor from the obligation sooner.

**10B. Power of Attorney**

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

**11B. Laws and Regulations**

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

**12B. Project Inspection:**

The CONTRACTOR shall make the project site and all project records available to Department of Public Services staff for review at all times during the course of the project. CITY staff and/or representative will monitor the progress of work for its own benefit, and not for the benefit of the contractor, to insure that the project is: (1) proceeding substantially as defined in the Scope of Work/Project Schedule sections of the executed Financial Assistance Agreement; and (2) proceeding in a manner which will produce the quantitative I/I reduction result which the community estimated would be achieved in the executed Financial Assistance Application. This monitoring is not intended to relieve, and under no circumstances shall it relieve, the contractor of its responsibility to perform its work in accordance with the Contract Documents and applicable federal, state and local law and regulations.

**13B. Project Audit Provisions:**

The contractor(s) shall maintain all books, records, documents, and other evidence directly related to the performance of all work for the project in accordance with generally accepted professional practice and appropriate accounting procedures and practices. The contractor(s) shall also maintain the financial information and data used by the contractor(s) in the preparation or support of project invoices and associated progress reports prepared in connection with the project.

**14B. OSHA Certification under Chapter 30 of the General Laws:**

The Contractor shall be required to make, among other certifications required by law, the OSHA certification required by G.L. c. 30, § 39S, as follows:

(1) that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (2) that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and (3) that all employees to be employed in the work subject to this bid have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration.

**15B. Failure to Enter into Contract**

The successful bidder, upon his failure or refusal to execute and deliver the Contract and bonds required within 10 calendar days after presentation thereof by the CITY, shall forfeit to the CITY, as liquidated damages for such failure or refusal, the security deposited with his/her bid, but the amount forfeited shall not exceed the difference between his/her bid price and the bid price of the next lowest responsible and eligible bidder.

**16B. Obligation of Bidder**

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

**17B. Information Not Guaranteed**

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

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

It is further agreed and understood that no bidder or Contractor shall use or be entitled to use any of the information made available to him or obtained in any examination made by him in any manner as a basis of or ground for any claim or demand against the CITY or the CITY Representative, arising from or by reason of any variance which may exist between the information made available and the actual subsurface or other structures actually encountered during the construction work, except as may otherwise be expressly provided for in the Contract Documents or G.L. c. 30, § 39N.

**18B. Bid Deposit**

A bid deposit in an amount that is not less than five percent (5%) of the value of the bid is required. Bid deposits shall be either in the form of;

1. A bid bond.
2. A certified check.
3. A treasurer's or cashier's check issued by, a responsible bank or trust company.
4. Cash.

Bidders are reminded that the bid deposit covers the CITY for damages when a bidder withdraws its bid after the bid submission date. Such security of general bidders will be returned to all except the three lowest responsible and eligible bidders within five days, Saturdays, Sundays, and legal holidays excluded, after the opening of bids, and the remaining securities will be returned promptly after the CITY and the accepted bidder have executed the Contract, or if no notice of intent to award has been presented to the selected contractor within 30 days, Saturdays, Sundays and holidays excluded, after the date of the opening of bids, upon demand of the bidder at any time thereafter.

Bid Deposits in form of a Bid Bond shall be uploaded and submitted at the same time as the IFB is submitted electronically.

If the bidder is submitting Cash, Certified Check, Treasurer' s Check or Cashier's Check, they must be submitted / received by the CITY before the IFB due date and time outlined in this contract. This form of Bid Deposit shall be delivered to the Newburyport Department of Services, 16A Perry Way, Newburyport MA, 01950. The Bid Deposit Affidavit form included in this IFB must also be completed by the Bidder.

**19B. Right to Reject Bid**

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

The CITY may also reject bids which in its sole judgment are either incomplete, conditional, obscure or not responsive or which contain additions not called for, erasures not properly initialed, alterations, or similar irregularities, and for any reason permitted by law.

**20B. Time for Completion**

The successful general bidder must agree to commence work on the date specified in the Notice to Proceed and to fully complete the project before the expiration of this contract.

**21B. Comparison of Bids**

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

**22B. Award of Contract**

The Contract will be awarded to **"the most responsible and responsive bidder offering the lowest total cost of all items listed in said IFB"** pursuant to General Laws Chapter 30, Section 39M as amended. Failure to bid on all items will result in a reject of said bid.

Such a bidder shall possess the skill, ability and integrity necessary for the faithful performance of the work, shall be able to furnish labor that can work in harmony with all other elements of labor employed, or to be employed, in the work, and shall otherwise comply with all applicable provisions of law. The contractor shall possess a positive work quality, public relations and satisfactory prior work experience for other cities and/or towns. Contract award shall be subject to availability of an appropriation for funding.

**The contract will be valid until 11:59pm on June 15, 2020.** It is anticipated that the work associated with this contract take three years to complete.

A Performance Bond and Payment Bond in the amount of One Hundred (100%) percent of the annual contract price will be required for the faithful performance of the Contract. The Contractor shall obtain and submit the bonds within ten (10) calendar days after notification of the bid award. The successful bidder's Bid Bond shall not be released until such time the Performance and Payment Bonds have been posted. Within seven (7) working days of receipt of acceptable Performance and Payment Bonds and Agreement signed by the contractor, the CITY shall sign the Agreement and return to such party an executed duplicate of the Agreement.

**23B. Statutes Regulating Competitive Bidding**

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

**24B. Wage Rates**

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

State schedules of Prevailing wage rates are included in the "Attachment" section of this documents.

**25B. Contractor Records**

The Contractor shall, in addition to any other requirements in the Contract Documents concerning the keeping of records, comply with the provisions of Massachusetts General Laws, Chapter 30, Section 39R concerning Contractor records.

**26B. Insurance and Bonding**

**CONTRACTOR'S LIABILITY INSURANCE**

The Contractor shall purchase and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
4. claims for damages insured by usual personal injury liability coverage;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting there from;
6. claims for damages because of bodily injury, death of a person or property damage arising out of CITY, maintenance or use of a motor vehicle;
7. claims for bodily injury or property damage arising out of completed operations.

The insurance required by the above section shall include all major divisions of coverage, and shall be on a comprehensive general basis including Premises and Operations (including X-C-U), Cities and Contractor's Protective, Products and Completed Operations, and Owned, Non-owned, and Hired Motor Vehicles. Such insurance shall be written for not less than any limits of liability required by law or those set forth in the Contract Documents, whichever is greater.

All insurance shall be written on an occurrence basis, unless the CITY approves in writing coverage on a claims-made basis. Coverage's, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment. The CITY shall be named as an Additional Insured on all policies.

Coverage for such liability insurance shall be provided by a company or companies reasonably acceptable to the CITY and authorized to do business in Massachusetts.

Certificates of insurance acceptable to the CITY shall be filed with the CITY prior to commencement of the Work. These certificates and the insurance policies required by this Section shall contain a provision that coverage's afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the CITY. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief. These certificates shall set forth evidence of all coverage required by all sections listed above. The Contractor shall furnish to the forthwith CITY copies of any endorsements that are subsequently issued amending limits of coverage.

#### **CITY'S LIABILITY INSURANCE**

The Contractor shall procure and pay for a policy of protective liability insurance insuring the CITY and its officers, employees and agents against claims which may arise from operations under the Contract or relating thereto.

#### **PROPERTY INSURANCE**

The Contractor shall purchase and maintain property insurance upon the entire Work at the site to the full insurable value thereof. Contractor shall furnish to CITY written confirmation as to the insurance carrier's most current financial ratings when it submits the Certificate of Insurance. Such insurance shall include the interests of the CITY, the Contractor, Subcontractors and Sub-subcontractors in the work and shall insure against the perils of fire and extended coverage and shall include "all risks" insurance for physical loss or damage including without duplication, theft, vandalism and malicious mischief. This insurance shall also cover portions of the Work stored off the site or in transit. If this insurance is written with stipulated amounts deductible, the CITY shall not be responsible for any difference between the payments made by the insurance carrier and the claim. The policy shall contain a provision that coverage's afforded under policies will not be canceled or allowed to expire until at least 30 days' written notice has been given to the CITY. The CITY shall be named insured within the policy.

Certificates from the insurance carrier shall be filed in triplicate with the CITY and shall state the type of coverage, limits of liability and the expiration date of each certificate.

With respect to insurance identified in paragraphs above (Comprehensive General Liability), such insurance shall name the CITY of Newburyport as additional named insured.

The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

The CITY shall have the power to adjust and settle with its insurers any loss for which it has obtained insurance.

Upon the occurrence of an insured loss, the CITY and the Contractor shall cooperate with each other and with each other's insurer in the submission of claims and related information and the distribution of any insurance proceeds. If after such a loss no other special agreement is made, replacement of damaged work shall be covered by an appropriate change order.

**MINIMUM AMOUNT OF INSURANCE**

In no case shall the limits of liability for the insurance required by this section be less than specified in the Supplemental General Conditions.

**CONTRACTOR'S LIABILITY INSURANCE AMOUNTS REQUIRED**

**A. Worker's Compensation and Employers Liability Insurance**

Coverage as required by the Worker's Compensation laws of the Commonwealth of Massachusetts, M.G.L. 149 §34A.

**B. General Liability**

Bodily Injury each occurrence limit	\$1,000,000
Bodily Injury aggregated limit	\$3,000,000
Property Damage each occurrence limit	\$1,000,000
Project Damage aggregated limit	\$3,000,000

Coverage must include Premises/Operations, Independent Contractors, Contractual Liability Assumed, Products/Completed Operations, Personal Injury, Pollution Liability, and shall not be subject to any of the special property damage liability exclusions commonly referred to as XCU exclusions.

**C. Automobile Liability**

Bodily Injury each person limit	\$1,000,000
Bodily Injury each occurrence limit	\$3,000,000
Property Damage each occurrence limit	\$1,000,000
Property Damage aggregated limit	\$3,000,000

Coverage must include Owned Vehicles, Leased Vehicles, Hired Vehicles, and Non-Owned Vehicles.

**D. Umbrella Liability**

General aggregate limit	\$2,000,000
Products - completed operations aggregate	\$2,000,000
Each occurrence limit	\$2,000,000

**E. Owner's Protective Liability Insurance**

The Contractor shall furnish the Certificates of Insurance naming the City of Newburyport as additionally insured as their interest may appear, and maintain the require insurances through the life of this Contract.

**F. General Requirements for All Lines of Insurance to be Furnishing**

All policies shall be written so the CITY shall be notified of cancellation or addition of "restrictive amendments" by registered mail or by facsimile not later than ten (10) days prior to the effective date of such cancellation or amendment.

If the initial policy/policies expire prior to the completion of the Work, renewal certificates shall be promptly filed with the Town for extension of said coverage. The full cost of insurance and renewing such coverage for additional amounts of time shall be the sole responsibility of the Contractor.

The Contractor shall require that each subcontractor procure, and maintain, until completion of that subcontractor's work, insurance of the types and to the limits set forth in the above sections. All such coverage by subcontractors shall be in favor of the Contractor, and the CITY shall be held harmless from liability in all such policies. Use of subcontractor(s) is subject to the specifications herein

**PERFORMANCE BOND AND PAYMENT BOND**

The Contractor shall furnish a Performance Bond in an amount at least equal to one hundred percent (100%) of the Contract price as security for the faithful performance of this Contract and also a Payment Bond in an amount not less than one hundred percent (100%) of the Contract price as security for the payment of all persons performing labor on the project under this Contract and furnishing materials in connection with this Contract. The Performance Bond and the Payment Bond may be in one or in separate instruments in accordance with local law, and in a form acceptable to the CITY, and shall remain in effect through the one-year warranty period.

**27B. Project Manager / CITY Representative**

The CITY will assign a project engineer and /or staff to manage for the CITY's benefit and not the Contractor's benefit. The CITY's project manager will be the main communication between the contractor and the CITY.

A contact person must be designated by the Contractor upon award of the Contract who will be accessible to the CITY on a twenty-four hour per day basis for the duration of the contract period. A 24-hour contractor representative phone number must be supplied to the CITY within five days after the contract signing.

**28B. Payroll**

Payroll Records, Labor, Maximum Hours of Employment: Every employee in public work shall lodge, board and trade where and with whom he elects; and no persons or his agents or employees under Contract with the Commonwealth, a county, CITY or with a department, board, commission or officer acting therefore, for the doing of public work, shall directly or indirectly require as a condition of employment therein, that the employee shall lodge, board or trade at a particular place or with a particular person (Chapter 149,Section 25 of the General Law).

No laborer, workman, mechanic, foreman or inspector working within this Commonwealth, in the employee of the Contractor, Sub-contractor or other persons doing or contracting to do the whole or a part of the work contemplated by this Contract, shall be required or permitted to work no more than eight (8) hours in any one day or no more than 48 hours in any one week, or no more than six (6) days in any one week, except in cases of emergency, or in case any CITY subject to Section 149 of the General Laws is a party to such a Contract, more than eight (8) hours in any one day, except as aforesaid. The CITY or the Contractor or any Subcontractor may employ laborers, work-men, mechanics, foreman and inspectors for more than eight (8) hours in any one day in the work to be done or under Contract when in the opinion of the Commissioner of Labor and Industries, public necessity so require. (Chapter 149, Section 34 of the General Laws, as amended).

Attention of Bidders is called to Section 148 of Chapter 149 of the General Laws and amendments thereof requiring the weekly payment of employees.

Upon request of the Engineer of the Massachusetts Department of Labor and Industries, the Contractor shall furnish certified copies of any or all payrolls for the Contract, showing the name, address, and occupational classification of each employee on said works, and the hours worked by, and the wages paid each such employee. Such payroll shall also include the rates paid for rented trucks or rental equipment of any kind used on the work. This requirement shall also apply to the work of any Sub-contractor having a Subcontract for any of the work performed on the project. Such records shall be kept in such manner as the Commissioner of Labor and Industries shall prescribe, and shall be open to inspection by the CITY or any authorized representative of the Department of Labor and Industries at any reasonable time and as often as may be necessary.

**29B. Buy American**

The Contractor agrees that preference will be given to domestic construction material by the Contractor, Subcontractor, material men, and suppliers in the performance of this Contract.

**30B. Compliance with Laws**

The Contractor shall keep himself fully informed of all existing and future Federal, State and Local Laws, ordinances, rules and regulations affecting those engaged or employed on the Work, the materials and equipment used in the Work or the conduct of the Work, and of all orders, decrees and other requirements of bodies or tribunals having any jurisdiction or authority over the same. If any discrepancy or inconsistency is discovered in the Drawings, Specifications or other Contract Documents in relation to any such law, ordinance, rule, regulation, order, decree or other requirement, the Contractor shall forthwith report to the CITY in writing before it submits its bid to the CITY, failing which the consequences of any such discrepancy or inconsistency shall be borne solely by the bidder if it is selected as the successful bidder. The Contractor shall at all times observe and comply with, and cause all his agents, servants and employees to observe and comply with all such existing and future laws, ordinances, rules, regulations, orders, decrees and other requirements and he shall protect, indemnify and save harmless the CITY, its officers, agents, servants, employees and the CITY from and against any and all claims, demands, suits, liabilities, judgments, penalties, losses, damages, costs and expenses, including attorney's fee, arising from or based upon any violation or claimed violation of any such law, ordinance, rule regulation, order, decree or other requirements, whether committed by the Contractor or any of his agents, servants or employees.

Applicable provisions of Massachusetts General Laws and Regulations and/or the United States Code and Code of Federal Regulations govern this contract and any provision in violation of the foregoing shall be deemed null, void and of no effect. Where conflict between applicable provisions of the Code of Federal Regulations and State Laws and Regulations exist, the more stringent requirement shall apply.

This project is subject to the Safety and Health Regulations of the U.S. Department of Labor set forth in Title 29 CFR, Part 1926 and to all subsequent amendments, and to 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 10.00 et seq.). Contractors shall be familiar with the requirements of these regulations.

**31B. Massachusetts Sales and Use Tax**

Materials and supplies to be used in the work of this contract are exempt from the Sales and Use Tax of the Commonwealth of Massachusetts to the extent provided by Chapter 64H, Section 6(f) of the General Laws. The Contractor shall obtain proper certificates, maintain the necessary records and otherwise comply with the requirements of Chapter 14 of the Acts of 1966 and any amendments thereto. Each Bidder shall take this exemption into account in calculating his Bid for the Work.

**32B. Method of Payment to Contractor**

The CITY, so long as the Contractor continues to carry on the Work, shall make monthly payments therefore as follows, subject to G.L. c. 30, § 39G: Each month prior to the completion of the work done to date of the estimate and thereupon the CITY may deduct such estimate five percent (5%) thereof, and shall pay the balance of such



estimate to the Contractor. Thirty (30) days after the satisfactory completion of the Work as determined by the CITY, the CITY shall pay the Contractor the final amount due and remaining to be paid under this Contract, **deducting from said amount and keeping for its own, any expense incurred by the CITY on account of defects, omissions or mistakes of the Contractor in his Work, and for any other reason permitted by the Contract Documents and law.** Provided, however, that no final payment shall be made until all liens and claims against the CITY and its officers, due to the work, are satisfied. The CITY will require certified payrolls before payments may be made for work performed.

Invoices shall clearly indicate quantities, hours, location, prices and other applicable measures that can be verified by The CITY on the basis of documented weight, service or delivery slips provided at the time work was performed or delivery/pick-up occurred.

**33B. Patented Devices, Materials and Processes**

It is mutually understood and agreed that, without exception, contract prices are to include all royalties and costs arising from patents, trademarks and copyrights in any way involved in the work. It is the intent that whenever the Contractor is required or desires to use any design, device, material or process covered by letters patent or copyright, the rights for such use shall be provided for by suitable legal agreement with the patentee or CITY.

**34B. Utility Company Coordination**

Written notice shall be given by the Contractor to all public service corporations or officials owning or having charge of publicly or privately owned utilities of his intention to commence operations affecting such utilities at least one (1) month in advance of the commencement of such operations that may affect their utilities and the Contractor shall at the same time file a copy of such notice with the CITY.

**35B. Dig Safe**

The Contractor shall notify DIG SAFE and procure a DIG SAFE number of each location in advance of starting any construction.

"DIG SAFE" Call Center: Telephone 1-888-344-7233.

**36B. intentionally left blank**

**37B. Estimated Quantities**

This Information for Bid (IFB) employs estimated quantities that may or may not be purchased during the contract term. The CITY reserves the right to exceed, reduce or not meet the estimated quantities as its needs dictate. Estimated quantities will be used for comparison of bids only, determining the Low Bidder and establishing the Bid Bond/Deposit Labor and Materials and Performance Bond amounts. The successful bidder shall have no claim on account of any variance between estimated and actual quantities except as may be provided, if at all, by M.G.L. c. 30, § 39N.

The CITY used good faith attempting to project future roadway and sidewalk work, however the Contractor must understand many of these decisions may be changed or modified based of emergency needs, and public and political demands.

**38B. Temporary Suspension of Work**

The CITY shall have the authority to suspend the work wholly or any part thereof, for such period as he may deem necessary, because of unsuitable weather conditions, for the safety and convenience of the public, or for such other causes as are considered unfavorable for the satisfactory completion of the work, or for such time as he may deem necessary due to the failure of the Contractor to carry out orders given or to perform any provision of the Contract. The work shall be resumed when conditions so warrant or deficiencies have been corrected and the conditions of the Contract satisfied as ordered or approved by the CITY.



**MANDATORY DECLARATION FORMS**

Section 1D

***FORM OF GENERAL BID***

Bid of \_\_\_\_\_ (hereinafter called "Bidder")\*  
*Company Name*

Of: \_\_\_\_\_  
*Company Address*

(  ) a corporation, organized and existing under the laws of the state of \_\_\_\_\_.

(  ) a partnership

(  ) a joint venture

(  ) an individual  
doing business as \_\_\_\_\_

To the CITY of Newburyport, Massachusetts (hereinafter called "CITY").

**A) The undersigned Bidder**, in compliance with your invitation for bids for the project known as **Plum Island Hydrant Replacement Project – Contract # 2017-DPS-009** having examined the plans and specifications and related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the project in accordance with the contract documents and the details and specifications within the time set forth below, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the contract documents, of which this bid is a part.

The Bidder hereby agrees to commence work on or before the date to be specified in written "Notice to Proceed" issued by the CITY, and to anticipate that all work under this contract shall be completed by June 15, 2020, or such other date as may be stated in writing by the CITY.

\_\_\_\_\_  
\*Specify corporation, partnership or individual as applicable.

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

No. \_\_\_\_\_ Dated: \_\_\_\_\_

No. \_\_\_\_\_ Dated: \_\_\_\_\_

C) The Bidder agrees to perform the bid work described in the specifications and shown and directed by the CITY for the following contract price:

In figures:     \$\_\_\_\_\_.

In words: \_\_\_\_\_

\_\_\_\_\_

**(The total bid stated above is the total bid amount in Section 2F of this document.)** In the event there is a discrepancy in the Form of General Bid between the unit price written in words and that in figures the lowest price shall govern.

The above bid price includes all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for, and all such labor etc. specified in and reasonably inferable from the Contract Documents.

The Bidder understands that all bids for this project are subject to the applicable bidding laws of the Commonwealth of Massachusetts, including, but not limited to, General Laws Chapter 30, Section 39M, as amended.

The Bidder understands that the CITY reserves the right to reject any or all bids and to waive any informalities in the bidding if it is in the public interest to do so.

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, and if an award of a contract is made within such period and its bid is one of the three lowest bids received by the CITY, it shall not withdraw its bid until a contract has been signed by the Contractor and the CITY.

Within 10 days of receipt of the written notice of acceptance of this bid, the Bidder will execute the formal Agreement set forth in accordance and as stipulated in the Instruction to Bidders section of this document.

Bid security is attached in the sum of five percent (5%) of the total bid in accordance with the conditions of the INSTRUCTIONS TO BIDDERS section here within. The bid security shall become the property of the CITY in the event the contract and bonds 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 price in accordance and as stipulated in the Instruction to Bidders section of this document.

D) Qualification Requirements

The undersigned offers the following information as evidence of his qualifications to perform the work as bid upon according to all the requirements of the plans and specifications. **Any “NO” responses will result in rejection of this bid.**

1. Have been in business under present name for 5 or more years      YES    /    NO
2. Have the company been in business for 5 or more years?      YES    /    NO
3. Capable of performing all necessary survey work (when needed to locate proposed work) associated with the construction outlined in this contract?      YES    /    NO
4. Does the contractor own, lease, rent or contract all equipment necessary to perform all work associated with this contract?      YES    /    NO
5. Has the contractor performed and completed similar type in a satisfactory manner on any one project with a contract value greater than one million dollars in the past five years?      YES    /    NO

E) Interested Parties.

The names and addresses of all persons interested in the bid (if made by a partnership or corporation) as principals, are as follows:

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(attach supplementary list if necessary)

F) Sub-Contractor Information.

List the names of all sub-contractors that the bidder may or will utilize under this contract. The subcontractors may be denied a work permit from the CITY if the CITY may have prior negative experience with same sub-contractor. The contractor will be required to replace a rejected sub-contractor at no additional expense to the CITY with another subcontract approved by the CITY. The CITY may contact these sub-contractors to confirm work relationship with the Contractor. Notwithstanding the foregoing, the exercise or lack of exercise of the City's rights set forth in this paragraph, shall not constitute the approval of any subcontractor under G.L. c. 30, §39F.

<b><u>Sub-contractor Company Name</u></b>	<b><u>Sub-contractor Address</u></b>	<b><u>Subcontractor Lead Contact</u></b>	<b><u>Type of work performing under this contract</u></b>



G) References. (Experience)

The bidder is requested to state below what work of a similar characteristic to that included in this contract the Contractor has completed successfully in the past 5 years and in good standings with no outstanding judgements pending. The CITY may contact these references and use this information to determine if the Contractor is possess the skill, ability and integrity necessary for the faithful performance of the work. Negative responses may result in rejection of Bid.

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

a. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

c. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

d. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

e. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

H) References. (Bank)

The bidder is requested to state below a financial institution that can confirm financial stability of the Contractor. The CITY may contact this reference and use this information to determine if the Contractor is capable of financially supporting such a Contract. Negative responses may result in rejection of Bid.

Bank reference \_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Bank)

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

\_\_\_\_\_  
(Telephone No.)

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

The undersigned Bidder hereby certifies under penalties of perjury, as follows: (1) that he/she is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (2) that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and (3) that all employees to be employed in the work subject to this bid have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration.

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

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



The undersigned certifies under penalty of perjury that the below named contractor is not presently debarred from doing public construction work in the commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

Respectfully submitted:

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

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

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

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

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

\_\_\_\_\_  
(CITY and State)

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

**BID DEPOSIT AFFIDAVIT FORM**

Section 2D

***BID DEPOSIT AFFIVIT FORM***

*(TO BE COMPLETED IN LIEU OF AN INSURANCE BID BOND CERTIFICATE)*

Bidders **not** submitting an “Insurance Bid Bond Certificate” are required to complete this form. It is the bidder’s responsibility to ensure that the Bid Deposit Affidavit form is completed and the Bid Deposit in the form of Cash, Certified Check, Treasurer’s Check, or Cashier’s Check has been submitted / received by the CITY prior to the closing of the Electronic Bid due date and time.

The Bidder understands and consents that any failure to do so whether his own or other fault will result in the rejection of said bid. The Bidder is solely responsible for the accuracy and value of the bid deposit. In the event that it is less than the required amount as outlined in the project specifications the bid will be rejected.

Total Bid Amount: \_\_\_\_\_ (from Section 1D of this IFB)

5% Bid Deposit Amount: \_\_\_\_\_

**CONTRACTOR COMPANY NAME:** \_\_\_\_\_

By \_\_\_\_\_  
(Name)

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

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

\_\_\_\_\_  
(CITY and State)

**Notice of Award**

Section 3D

***NOTICE OF AWARD***

To: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PROJECT Description: **Plum Island Hydrant Replacement Project**  
**Contract # 2017-DPS-009**

The CITY has considered the Bid submitted by you for the above described Work in response to its Advertisement for Bids and Information for Bidders.

You are hereby notified that your Bid has been accepted at the Total Bid Price of \$\_\_\_\_\_.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR's Performance Bond, Payment Bond and certificates of insurance within ten calendar days from the date of this Notice.

If you fail to execute said Agreement and to furnish said Bonds within the ten calendar days from the date of this Notice, said your Bid Security shall be forfeited to the CITY. The CITY will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the CITY.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Department of Public Services  
Newburyport, Massachusetts (CITY)

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

**CERTIFICATE OF VOTE**

Section 5D

***CERTIFICATE OF VOTE***

(to be filed if Contractor is a Corporation)

I, \_\_\_\_\_, hereby certify that I am the duly qualified  
(Secretary of the Corporation)  
and acting Secretary of \_\_\_\_\_ and I further certify that a meeting of the  
(Name of Corporation)  
Directors of said Company, duly called and held on \_\_\_\_\_, at which  
(Date of Meeting)  
all Directors were present and voting, the following vote was unanimously passed:

VOTED: To authorize and empower

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

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

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

By: \_\_\_\_\_  
(Secretary of Corporation)

A True Copy:

Attest: \_\_\_\_\_  
(Notary Public)

My Commission Expires: \_\_\_\_\_  
(DATE)

**CONSTRUCTION PERFORMANCE BOND**

Section 9D

***CONSTRUCTION PERFORMANCE BOND***

KNOW ALL MEN BY THESE PRESENTS: That we \_\_\_\_\_

(Name of Contractor)

a \_\_\_\_\_ hereinafter called "Principal" and  
(Corporation, Partnership, Joint Venture or Individual)

\_\_\_\_\_ of \_\_\_\_\_, State of \_\_\_\_\_

(Surety)

hereinafter called the "Surety" and licensed by the State Division of Insurance to do business under the laws of the Commonwealth of Massachusetts, are held and firmly bound to the CITY of Newburyport, Massachusetts, hereinafter called "CITY", in the sum of;

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

(100% of the bid price of here within contract)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered into a certain contract with the CITY, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ (the "Construction Contract"), for the construction described as follows:

**Plum Island Hydrant Replacement Project – Contract # 2017-DPS-009**

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of the Construction 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 if he shall satisfy all claims and demands incurred under the Construction 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 the Surety's obligation under this Bond shall arise after (1) the CITY has declared the Principal in default of the Construction Contract or any provision thereof or (2) has declared that the Principal has failed, or is otherwise unable or unwilling, to execute the work consistent with, and in conformance to, the Construction Contract (collectively referred to as a "Contractor Default"). The determination of a Contractor Default shall be made solely by the CITY. The CITY need not terminate the Construction Contract to declare a Contractor Default or to invoke its rights under this Bond.

When the Surety's obligation under this Bond arises, the Surety, at its sole expense and at the consent and election of the CITY, shall promptly take one of the following steps: (1) arrange for the Principal to perform and complete the work of the Construction Contract; (2) arrange for a contractor other than the Principal to perform and complete the work of the Construction Contract; (3) reimburse the CITY, in a manner and at such time as the

CITY shall decide, for all costs and expenses incurred by the CITY in performing and completing the work of the Construction Contract. Surety will keep CITY reasonably informed of the progress, status and results of any investigation of any claim of the CITY.

If the Surety does not proceed as provided in this Bond with due diligence and all deliberate speed, the Surety shall be deemed to be in default of this Bond, and the CITY shall be entitled to promptly enforce any remedy available to the CITY notwithstanding any defenses or objections raised by the Principal.

After the Surety's obligation under this Bond arises, the Surety is obligated, to the limit of the amounts of this Bond, for (1) the correction of defective work and completion of the Construction Contract; (2) additional design, professional services, and legal costs, including attorneys' fees, resulting from the Contractor Default or from the default of the Surety under this Bond; (3) any additional work beyond the Construction Contract made necessary by the Contractor Default or default of the Surety under this Bond; (4) indemnification obligation of the Principal, if any, as provided in the Construction Contract; and (5) liquidated damages as provided in the Construction Contract, or if none are so specified, actual and foreseeable consequential damages resulting from the Contractor Default or default of the Surety under this Bond. Any proceeding, legal or equitable, under this Bond shall be instituted in any court of competent jurisdiction in the Commonwealth of Massachusetts.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Construction 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 Construction Contract or to the work or to the specifications.

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_\_ ( ) counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 2017

ATTEST:

\_\_\_\_\_  
Principal

\_\_\_\_\_  
(Principal Secretary)

By

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

\_\_\_\_\_  
(Address-Zip Code)

\_\_\_\_\_  
Witness as to Principal

\_\_\_\_\_  
(Address-Zip Code)

ATTEST:

\_\_\_\_\_ By \_\_\_\_\_  
Surety  
(Attorney-in-Fact)

\_\_\_\_\_ (SEAL)  
Witness as to Surety  
\_\_\_\_\_  
\_\_\_\_\_  
(Address-Zip Code)

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

**CONSTRUCTION PAYMENT BOND**

Section 10D

***CONSTRUCTION PAYMENT BOND***

KNOW ALL MEN BY THESE PRESENTS: That we \_\_\_\_\_

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

hereinafter called "Principal" and \_\_\_\_\_ of \_\_\_\_\_,  
(Surety)

State of \_\_\_\_\_ hereinafter called the "Surety" and licensed by the State  
(CITY and State)

Division of Insurance to do business under the laws of the Commonwealth of Massachusetts, are held and firmly bound to the CITY of \_\_\_\_\_, Massachusetts, hereinafter called "CITY", in the sum of;

\_\_\_\_\_ Dollars (\$\_\_\_\_\_ )  
(100% of the bid price of here within contract)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

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

**Plum Island Hydrant Replacement Project – Contract # 2017-DPS-009**

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

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



on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of this contract or to the work or to the specifications.

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

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

ATTEST:

\_\_\_\_\_  
Surety

\_\_\_\_\_

By

\_\_\_\_\_  
(Attorney-in-Fact)

\_\_\_\_\_

\_\_\_\_\_  
(Address-Zip Code)

\_\_\_\_\_ (SEAL)  
Witness as to Surety

\_\_\_\_\_

\_\_\_\_\_  
(Address-Zip Code)

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

**NOTICE TO PROCEED**

Section 11D

***NOTICE TO PROCEED***

To: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

Project: **Plum Island Hydrant Replacement Project**  
**Contract # 2017 – DPS - 009**  
**NEWBURYPORT, MA**

You are hereby notified to commence Work in accordance with the Agreement dated;

\_\_\_\_\_, 20\_\_ on or before \_\_\_\_\_, 20\_\_ and the contract will terminate on June 15, 2020.

Department of Public Services  
Newburyport, Massachusetts

\_\_\_\_\_

**TITLE:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

***ACCEPTANCE OF NOTICE TO BE COMPLETED BT CONTRACTOR***

***Receipt of the above NOTICE TO PROCEED is hereby acknowledged***

By: \_\_\_\_\_ (COMPANY / CORPORATION NAME)

this the \_\_\_\_\_ day

of \_\_\_\_\_, 20\_\_

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

Title: \_\_\_\_\_

**ATTACHMENT 1F**  
TECHNICAL SPECIFICATIONS

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DIVISION 2 – SITE CONSTRUCTION

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02140	Dewatering and Drainage Control
02200	Earthwork
02500	Roadways, Sidewalks, and Curbs
02610	Water Supply System
02800	Planting and Seeding

DIVISIONS 3 thru 16

NOT USED

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## SECTION 01010

### SUMMARY OF WORK

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment, and incidentals necessary for the hydrant and valve improvements complete and ready for operation as shown on the Drawings and specified herein.
- B. The Work includes, but is not limited to, the replacement of the existing fire hydrants on Plum Island and the Plum Island Turnpike, and the installation of new isolation gate valves, with the major items summarized as follows:
  - 1. Removal and disposal of existing hydrant assemblies.
  - 2. Furnishing and installing new hydrant assemblies.
  - 3. Furnishing and installing isolation valves to existing water mains.
  - 4. Temporary water supply bypass systems.
  - 5. Testing and disinfecting installed materials.
  - 6. Tape-wrapping and poly-wrapping of metallic components and piping for corrosion protection.
  - 7. Traffic signage and traffic control.
  - 8. Pavement, walkway, low retaining walls, fencing, plantings, and other landscaping restorations.
  - 9. Distributing public notices to all properties and other public information assistance.
- C. The Work also includes such incidentals as dewatering, disposal of unsuitable and waste materials, saw cutting, and temporary and permanent pavement patch repairs.
- D. Contractor shall obtain a permit for excavation of trenches from the DPS and otherwise comply with 520 CMR Department of Public Safety, Section 14.00 Excavation and Trench Safety.
- E. The work done under this Contract shall be in conformance with the Massachusetts Department of Transportation-Highway Division latest editions of the STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, and all SUPPLEMENTAL SPECIFICATIONS, MASSDOT ENGINEERING DIRECTIVES, CONSTRUCTION STANDARD DETAILS, THE STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, and THE WORK ZONE SAFETY GUIDELINES, except as otherwise indicated in these Contract Documents (Drawings and/or Specifications). Any discrepancy between the aforementioned documents and these Contract Documents shall be brought to the attention of the City for resolution prior to performing the work.

##### 1.02 CONTRACT TYPE

- A. Construct the Work under a unit price contract.

### 1.03 WORK SEQUENCE

- A. General: All work shall be as specified herein and in strict accordance with these Contract Documents, unless otherwise directed or approved in writing by the City.
- B. For all work adjacent to the Marsh and other wetland resource areas, sedimentation and erosion controls must be installed prior to the commencement of the work.
- C. Water supply shutdown Zones have been assigned to provide order and control, to assist the Contractor in planning their work, to minimize the geographical area being shut down in the event of a fire, and to inform the residents, public safety officials, and the City which properties will be without water on any given day. Refer to the Drawings for locations of these shutdown Zones.
- D. The Contractor shall not operate the existing valves. **Only DPS personnel will be allowed to shut down the water supply.**
- E. Contractor shall provide a 5-day construction schedule at the pre-construction meeting and on a weekly basis thereafter for purposes of discussion and review by the City. No Zone shall be shut down unless and until the schedule or plan has been approved by the City. The schedule shall include the hydrants and/or isolation valves to be replaced and installed, traffic control and detours proposed, and all other non-hydrant related work, such as landscaping, paving, etc.
- F. Work hours shall be 8am – 4pm, Monday thru Friday, except Holidays. Work may be extended beyond these times/days by the City under special circumstances but only with prior approval.
- G. **A maximum of two (2) Zones shall be shut down on any given day** and the Zones shall be on opposite ends of the Island from each other or as far away from each other as possible. The purpose is to control and minimize the number of hydrants inoperable at any one time within a neighborhood (or area of the Island) in the event of a fire.
- H. **A maximum of two (2) hydrants per Zone and a maximum of three (3) open excavations shall be performed on any given day.** These three open excavations can be two hydrants and one isolation valve installation, or one hydrant and two valves, or three valves, providing that only three are being performed on any given day. These requirements are necessary for fire protection purposes.
- I. **A Zone shall not be shut down for more than one day in any given week (Sunday - Saturday).** If a Zone has multiple hydrants and/or isolation valve installations, the Contractor is expected to provide multiple crews in order to minimize the number of times that a Zone has to be shut down. The purpose of this requirement is to prevent a property (especially vacationers) from being without water multiple times per week.
- J. **Public Notices:** No shutdown of any Zone or work on private property shall occur until the property owner(s) have been properly notified. The notifications process shall be strictly enforced and adhered to and the Contractor shall staff accordingly to keep up with these notifications. It is anticipated that notifications to the residents shall be as follows:
  - 1. A physical handout distributed **by the Contractor** to each home or business the day before the water system shutdown and/or any work on private property is planned, and;
  - 2. The 5-day construction schedule shall be submitted to the City every Friday by 12pm noon. DPS will post the schedule onto the City's website.
- K. The Contractor shall not move on to the next hydrant replacement or isolation valve installation until the work has been accepted as complete by the City. (This approval does not relieve the contractor of any and all warranty provisions made part of these contract documents.)



Landscaping, paving, and other similar non-waterworks related work can remain outstanding when proceeding to the next hydrant. The purpose is to assure the City that each hydrant/valve has been replaced properly and is operable before moving on to the next hydrant/valve.

- L. The Contractor may expect a reasonable delay by DPS personnel or the City to perform the necessary inspections. If the Contractor backfills prior to the City's "sign off" (approval of the work), the hydrant assembly or valve shall be excavated for inspection and retested to the satisfaction of the City at no additional cost to the City.
- M. No new hydrant replacement shall take place (i.e. late in the day) unless assurance is given that the replacement can be completed by the end of business or a time suitable to the City.
- N. Plum Island Turnpike hydrants:
  - 1. The Contractor shall install a temporary bypass prior to replacing the hydrants along the Plum Island Turnpike in order to provide the Island with uninterrupted flows. Hydrant-to-hydrant connections will be allowed but only during construction hours.
  - 2. The bypass can only be performed in the spring between April 15 and June 15 or in the fall between September 15 and November 15. Bypassing will not be allowed during the summer months when the Island's water demand and the risk of fire are greatest.
  - 3. The Contractor shall inform the City well in advance of these shutdowns so they can inform the fire department in order to provide backup tankers and equipment. NO temporary bypassing shall take place until the fire department has equipment and personnel ready on the Island and the City has given the Contractor the approval to proceed.
  - 4. The hydrants on each side of the drawbridge on the Turnpike will require that the temporary bypass piping be laid on top of and across the drawbridge. This will require a 40-day advance notice from the Contractor to DPS so DPS can coordinate with MDOT and the Coast Guard.

#### **1.04 SITE CONDITIONS**

- A. Examination of Site Conditions: The Contractor shall be solely responsible for judging the full extent of work requirements involved, including but not limited to, the potential need for storing materials temporarily and/or rehandling items prior to final installation; space limitations within the right-of-ways; protection of private properties, such as fencing, walls, and landscaping; and documenting with photographs of the condition of materials and properties to remain. Any damage to existing properties to-remain due to the Contractor's negligence shall be replaced or repaired to the satisfaction of the City at no cost to the Project. No claims shall be accepted by the City for issues related to the Contractor not properly examining the existing conditions prior to placing his/her Bid and/or performing the Work.

#### **1.05 TRAFFIC CONTROL**

- A. Conduct the Work to ensure minimum interference with roads, driveways, sidewalks, and other active facilities.
- B. Do not close or obstruct roads or active facilities without permission from the City. When working on dead end streets coordinate with the residents ahead of time to prevent them from being blocked in and coordinate with the City to provide alternative parking areas for those being blocked in due to road closure.
- C. The Contractor is responsible for the placement of signage and other traffic control devices PRIOR TO the work being performed.

- D. In general, the narrow side streets will not require police detail. Police detail shall be required on the main roads as directed, managed, and paid for by the City. The Contractor shall coordinate his/her work with City and Police. Construction delays are always anticipated on the main roads and the Contractor shall plan accordingly.
- E. The Contractor is responsible for providing emergency personnel access thru their work area at all times (eg. road plates, backfilling of trench, etc.).

**1.06 CONSTRUCTION STAGING AND USE OF PREMISES**

- A. Contractor shall limit their use of premises for work, storage, and access, and shall allow:
  - 1. Owner occupancy on Owner's property.
  - 2. Normal public use of public property, right-of-ways, etc.
  - 3. Access to private property.
- B. Coordinate use of premises under direction of the City.
- C. Staging Areas: The Contractor may use the open space area at the sewer pump station property on Olga Way for staging during the project. Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

**PART 2 - PRODUCTS**

Not used.

**PART 3 - EXECUTION**

Not used

END OF SECTION

## SECTION 01025

### MEASUREMENT AND PAYMENT

#### PART 1 - GENERAL

##### 1.01 MEASUREMENT AND PAYMENT

- A. The items of work required by the General Conditions, Supplementary Conditions, Special Conditions, Division 1 of the Contract Documents, and any other Specification Section that requires work to be performed but not specifically under any particular pay item shall not be measured nor paid separately, except as expressly indicated herein, but shall be included in the prices bid for each unit and lump sum item.
- B. The payment for unit and lump sum items shall include full compensation for the furnishing and providing of all materials, labor, tools, equipment, and all incidental work necessary for the satisfactory completion of the item in accordance with the Contract Documents and as directed by the City whether or not the particular work is mentioned in the following paragraphs. Such incidentals include, but are not limited to, shutting down the water mains, traffic management, coordination with the public and delivery of public notices, and cutting of water mains.
- C. At the end of each day's work or as otherwise agreed upon by the City, the Contractor's superintendent or other authorized representative shall meet with the Resident Project Representative to determine the quantities of unit price and/or lump sum price work accomplished and/or completed during the work day.
- D. Once each month the Contractor shall prepare and sign an Application for Payment, and submit the original and two (2) copies for review and signature of the Resident Project Representative and the City. These completed forms will provide the basis upon which payment will be made to the Contractor.
- E. Payments to the Contractor shall be made for the actual quantities of the contract unit price items performed and accepted in accordance with the Contract Documents. Upon completion of construction, if these actual quantities show either an increase or decrease from the quantities given in the Bid, the contract unit prices shall still prevail, except as provided elsewhere in the Contract Documents.
- F. No payment of any Application for Payment or of any retained percentage shall relieve the Contractor of his obligation to repair or replace any defective parts of the construction or to be responsible for all damage due to such defects during the construction period or the one-year warranty period.
- G. The City has attempted to provide the Contractor with an accurate location of the existing water system components. Record (as-built) Drawings are made part of the Contract Documents. However, these records may not accurately reflect the exact location of the water mains, tees, or fittings that are proposed to be replaced under this Contract. Sawcutting of roadways and trench excavations shall not begin until after the streets have been marked by DigSafe and the City has approved the locations to be excavated. Excavation performed prior to the City's approval will not be measured nor paid for.

## 1.02 LIMITS OF NORMAL EXCAVATION

- A. In determining the quantities of excavation to which unit prices shall apply, the limits of normal width shall be as shown on the Drawings. The normal depth shall be measured to a distance of 6-inches below the bottom of the pipe.

## PART 2 - PAY ITEMS

### 2.01 HYDRANT ASSEMBLIES (ITEMS 1A THRU 1E)

- A. Measurement: Per each complete in-place, as detailed on the Drawings and as directed by the City, and accepted by the City.
- B. Payment: At the Contract Unit Price per each complete in-place and shall be full compensation for: sawcutting pavement; removal and disposal of existing pavement; removing and replacing existing driveway and walkway gravel and/or stone; excavation, backfill, and compaction; dewatering; earth support and support of utilities; furnishing and installing backfill and bedding material; removal and disposal of the existing hydrant assembly (hydrant, connection piping, valve, valve box, tee fitting at main and all other fittings and incidental hardware); furnishing and installing hydrant assembly, including hydrant, gate valve(s) as outlined in Subparagraphs 1-3 below, valve box, piping, spool pieces, tie-rod restraint system, anchor tee at main, restrained couplings, grip rings, fittings, and hardware for a complete connection to the existing main; tape wrapping and polyethylene wrap around piping and joints; concrete collar; chlorination; testing; loam and seed; removing and resetting shrubs and small plantings, beach (snow) fences, granite bollards, and landscape timbers (railroad ties); erosion control, and all incidentals necessary for the satisfactory completion of the work.
1. **TYPE 1 (ITEM 1A):** Type 1 Hydrant Assemblies consist of a typical hydrant assembly as described in Paragraphs A and B above but with one (1) 6-inch shutoff gate valve on the hydrant connection piping and no valves on the main line. This pay item does not differentiate between water main sizes – i.e. includes connection to existing mains regardless of the size of main.
  2. **TYPE 2 (ITEMS 1B THRU 1D):** Type 2 Hydrant Assemblies consist of a typical hydrant assembly as described in Paragraphs A and B above but with two (2) shutoff valves: one (1) 6-inch gate valve on the hydrant connection piping and one valve on the main line (size to be determined by the size of the main). These pay items are based on size of the main that the assembly will connect to.
  3. **TYPE 3 (ITEM 1E):** Type 3 Hydrant Assemblies consist of a typical hydrant assembly as described in Paragraphs A and B above but with three (3) shutoff valves: one (1) 6-inch gate valve on the hydrant connection piping and one valve on each side of the main line tee fitting connection (size to be determined by the size of the main). This pay item is based on size of the main that the assembly will connect to.
- C. The measurement and payment for all materials, labor, components, and work that make up the Hydrant Assembly Pay Items are based on the average length of the existing hydrant connection pipe (7.3 feet valve to hydrant), as shown in the Tables on the Drawings. Therefore, the Contractor shall base their Contract Unit Price per each hydrant assembly on this average hydrant connection pipe length, knowing that some hydrant replacements will require more or less pipe and fittings, and more or less work to be performed. The distance from existing hydrant to existing valve for each hydrant is also shown in the Tables on the Drawings and the existing hydrant valves are directly connected to the existing tee at the main, according to the Record As-Built Plans.
- D. For existing hydrant assemblies where the hydrant connection valve is not connected directly to the main, the measurement and payment for performing the additional length will be paid for under the *6-inch Ductile Iron Piping* pay item.

- E. Payments for additional landscaping work (such as, removing and resetting retaining walls, fences, mailboxes, driveway and walkway pavers, tree removing and replanting) not incidental to the hydrant assemblies as noted above, shall be paid for separately under the Items for which they pertain.
- F. If additional piping, fittings, or other appurtenances beyond the assemblies as shown on the Drawings are necessary in order to tie into the water mains and if approved by the City, these additional items will be paid for separately, under the items for which they pertain.
- G. Limits of excavation for all Hydrant Assembly Pay Items shall be as shown on the Drawings.
- H. The Contractor shall dispose of all but seventy five (75) of the existing hydrants being replaced. These hydrants (including barrel and shoe) shall be delivered to the Department of Public Services facility located at 16A Perry Way, and the Contractor shall account for this in the Contract Unit Prices for Hydrant Assemblies. The City will determine which hydrants shall be salvaged, based on hydrant condition.

**2.02 GATE VALVES (GV) AND BOXES (ITEMS 2A THRU 2D)**

- A. Measurement: Per each complete in-place, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price of the respective size per each complete in-place and shall be full compensation for: removing and disposing of existing gate valve (if applicable); furnishing and installing gate valve of the respective size and all associated hardware; valve box and cover; sawcutting pavement, removal and disposal of pavement, excavation, backfill, dewatering, and all earthwork-related work; adapter connection to tees; grip rings; tape wrapping; concrete block support; chlorination; testing; and all incidentals necessary for the satisfactory completion of the work.

**2.03 RESTRAINED JOINT GATE VALVES (RGV) AND BOXES (ITEMS 3A THRU 3D)**

- A. Measurement: Per each complete in-place, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price of the respective size per each complete in-place and shall be full compensation for: removing and disposing of existing gate valve (if applicable); furnishing and installing gate valve and all associated hardware; valve box and cover; sawcutting pavement, removal and disposal of pavement, excavation, backfill, dewatering, and all earthwork-related work; tape wrapping; concrete block support; chlorination; testing; and all incidentals necessary for the satisfactory completion of the work.

**2.04 FITTINGS AND TEES (ITEMS 4A THRU 4I)**

- A. Measurement: Per each complete in-place, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price of the respective pipe size per each complete in-place and shall be full compensation for: sawcutting pavement, removal and disposal of pavement, excavation, backfill, dewatering, and all earthwork-related work; furnishing and installing fittings and tees and all associated hardware; thrust blocks; grip rings; tape wrapping; chlorination; testing; and all incidentals necessary for the satisfactory completion of the work
- C. Measurement and payment for fittings shall be based on the respective pipe size regardless of the angle or type of fitting.

**2.05 TRANSITION COUPLINGS (ITEMS 5A THRU 5D)**

- A. Measurement: Per each complete in-place, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price of the respective size per each complete in-place and shall be full compensation for: sawcutting pavement, removal and disposal of pavement, excavation, backfill, dewatering, and all earthwork-related work; furnishing and installing restrained joint coupling and all associated hardware; connections to piping; tape wrapping; chlorination; testing; and all incidentals necessary for the satisfactory completion of the work.

**2.06 DUCTILE IRON PIPE (ITEMS 6A THRU 6D)**

- A. Measurement: Per linear foot complete in-place, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per linear foot complete in-place of the respective size pipe and spool pieces and shall be full compensation for: sawcutting pavement; removal and disposal of existing pavement; removing and replacing existing driveway and walkway gravel and/or stone; excavation, backfill, and compaction; dewatering; earth support and support of utilities; furnishing and installing backfill and bedding material; removal and disposal of existing piping and fittings; grip rings, fittings, and hardware for a complete connection to the existing main; tape wrapping; polyethylene wrap around piping and joints; chlorination; testing; temporary pavement patch; loam and seed; erosion control, and all incidentals necessary for the satisfactory completion of the work.

**2.07 1" AND 2" POLYETHYLENE (PE) WATER SERVICE (ITEMS 7 & 8)**

- A. Measurement: Per linear foot complete in-place, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per linear foot complete in-place of the respective size PE tubing and shall be full compensation for: sawcutting pavement; removal and disposal of existing pavement; excavation, backfill, and compaction; dewatering; earth support and support of utilities; furnishing and installing backfill and bedding material; removal and disposal of existing tubing and materials; furnishing and installing new 1" and 2" PE tubing; transition couplings and connection to existing; tap into new main; valve and associated hardware; chlorination; testing; and all incidentals necessary for the satisfactory completion of the work.

**2.08 TEST PITS (ITEM 9)**

- A. Measurement: Per cubic yard, as directed by and measured in the field by the City.
- B. Payment: At the Contract Unit Price per cubic yard and shall be full compensation for: sawcutting pavement; removal and disposal of existing pavement; excavation and backfill; earth support; support of utilities; compaction; traffic management; temporary pavement patch; and all incidentals necessary for the satisfactory completion of the work.
- C. Hand excavation will be required in order to prevent damage to utilities and to accomplish the work required and is incidental to this Trench Excavation pay item.
- D. Excavation for the benefit of the Contractor will not be measured nor paid for.
- E. This pay item will be used to perform the exploratory excavations necessary to expose the water system in order to perform the Work, but only after the City has agreed in the field

exactly where the excavation shall begin. Excavation performed prior to the City approving its location will not be measured nor paid for.

**2.09 UNCLASSIFIED EXCAVATION (ITEM 10)**

- A. Measurement: Per cubic yard, as directed by and measured in the field by the City.
- B. Payment: At the Contract Unit Price per cubic yard and shall be full compensation for: earth excavation to remove and dispose of unsuitable material below limits of normal depth excavation as shown on the Drawings; earth support; support of utilities; traffic management; and all incidentals necessary for the satisfactory completion of the work
- C. Backfill to replace excavated unsuitable material will be measured and paid for separately under *Gravel Borrow* pay item.

**2.10 TEMPORARY WATER BYPASS SYSTEM ALONG TURNPIKE (ITEM 11)**

- A. Measurement: Per lump sum, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per lump sum and shall be full compensation for furnishing and installing a temporary water bypass system, as shown on the Drawings and as specified, capable of providing continuous water supply until the installation of the new hydrant assemblies have been completed, tested, and accepted by the City and approval has been granted by the City to remove the temporary water service.
- C. Work included:
  - 1. Furnishing and installation of all pipe and materials required for the work.
  - 2. Protection from damage, such as, by vehicles and construction equipment.
  - 3. Maintenance of temporary system, including disinfecting and water quality testing.

**2.11 TEMPORARY WATER SUPPLY SYSTEM (ITEM 12)**

- A. Measurement: Per lump sum, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per lump sum and shall be full compensation for furnishing and installing a temporary water bypass system to the properties as shown on the Drawings and as specified, capable of providing continuous water supply until the work within that Zone has been completed, tested, and accepted by the City and approval has been granted by the City to remove the temporary water service.
- C. Work included:
  - 1. Furnishing and installation of all pipe and materials required for the work.
  - 2. Protection from damage, such as, by vehicles and construction equipment.
  - 3. Maintenance of temporary system, including disinfecting and water quality testing.

**2.12 HYDRANT ASSEMBLY REMOVAL (ITEM 13)**

- A. Measurement: Per each, for those hydrants shown on the Drawings to be removed and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per each and shall be full compensation for the cost of: sawcutting pavement; removal and disposal of existing pavement; removing and replacing

existing driveway and walkway gravel and/or stone; excavation, backfill, and compaction; dewatering; earth support and support of utilities; furnishing and installing backfill and bedding material; removal and disposal of the existing hydrant assembly (hydrant, connection piping, valve, valve box, tee fitting at main and all other fittings and incidental hardware); delivery of thirty (30) hydrants to DPS facility; furnishing and installing spool pieces, restrained couplings, and other hardware, as shown on the Drawings and as specified, for a complete connection to the existing main; tape wrapping; polyethylene wrap around piping and joints; chlorination; testing; loam and seed; erosion control, and all incidentals necessary for the satisfactory completion of the work.

- C. This item shall be used to pay for the excavation and removal of those hydrants identified on the Drawings as being replaced but being replaced to a different location (identified with a double asterisk on the Drawings). Measurement and payment for the installation of a new hydrant assembly at the relocated location shall be made separately under the Hydrant Assembly pay item for the size and type to which it pertains.

**2.13 UTILITY POLE SUPPORT (ITEM 14)**

- A. Measurement: Per each, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per each and shall be full compensation for coordinating with the Utility Owner of the pole before and during excavation until the hydrants or valve work is complete and the roadway has been compacted and is acceptable to the Utility Owner to remove the temporary pole support. The Utility Owner shall support the poles. All costs due to the Utility Owner for support of poles shall be paid directly to the Utility Owner by the City and not the Contractor.

**2.14 GRAVEL BORROW (ITEM 15)**

- A. Measurement: Per cubic yard measured after compaction in-place, as shown on the Drawings and as specified herein and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per cubic yard and shall be full compensation for furnishing, placing, compacting, grading, sampling, testing, and all incidentals necessary for the satisfactory completion of the work.
- C. This item is for replacing any unsuitable materials encountered during the work and for temporary and permanent pavement base courses, and as directed and approved by the City.

**2.15 CRUSHED STONE FOR DRIVEWAYS (ITEM 16)**

- A. Measurement: Per ton furnished and measured in-place and as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per ton and shall be full compensation for the cost of furnishing, placing, compacting, grading, sampling, testing, and all incidentals necessary for the satisfactory completion of the work.

**2.16 TEMPORARY PAVEMENT PATCH (ITEM 17)**

- A. Measurement: Per square yard and shall be the actual and verified tonnage, complete in-place to the depth shown on the Drawings, verified by weight slips signed by the City at the time of delivery, and accepted by the City.
- B. Payment: At the Contract Unit Price per square yard complete in-place and shall be full compensation for furnishing, placing, spreading, rolling, maintaining through the guaranteed period, tack coats, and all incidentals necessary for the satisfactory completion of the work.
- C. Gravel base course will be measured and paid for separately under *Gravel Borrow* pay item.



**2.17 PERMANENT PAVEMENT REPAIRS (ITEM 18)**

- A. Measurement: Per square yard and shall be the actual and verified tonnage, complete in-place to the dimensions and depths shown on the Drawings, verified by weight slips signed by the City at the time of delivery, and accepted by the City.
- B. Payment: At the Contract Unit Price per square yard complete in-place and shall be full compensation for: sawcutting pavement; removal and disposal of existing pavement furnishing, placing, spreading, rolling, maintaining through the guaranteed period, tack coats, and all incidentals necessary for the satisfactory completion of the work.

**2.18 MAILBOXES REMOVED & RESET (ITEM 19)**

- A. Measurement: Per each complete in-place, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per each complete in-place and shall be full compensation for the removing and resetting existing mailboxes, and all incidentals necessary for the satisfactory completion of the work.

**2.19 BLOCK WALL REMOVED & RESET (ITEM 20)**

- A. Measurement: Per linear foot complete in-place, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per linear foot complete in-place and shall be full compensation for: the removal and temporary stockpiling of existing 1.5 foot high landscape block wall for reuse; rebuilding of block wall; furnishing and installing additional new blocks as may be required; leveling; backfilling and compacting granular material behind the wall and for the foundation; loaming and seeding of impacted areas; and all incidentals necessary for the satisfactory completion of the work.

**2.20 CONCRETE UNIT PAVERS REMOVED & RESET (ITEM 21)**

- A. Measurement: Per square foot complete in-place, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per square foot complete in-place and shall be full compensation for: removal and temporary stockpiling of existing unit pavers for reuse; furnishing and installing new unit pavers if required; layout; furnishing and compacting gravel base, resetting unit pavers, filling joints to match existing, and all incidentals necessary for the satisfactory completion of the work.

**2.21 PAVER/COBBLE EDGING REMOVED AND RESET (ITEM 22)**

- A. Measurement: Per linear foot measured along the face of the pavers/cobbles as measured by the City, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per linear foot and shall be full compensation for: removal, temporary stockpiling and resetting of existing pavers/cobbles; backfilling and compacting granular material behind the pavers/cobbles and for the loaming and seeding of impacted areas, and all incidentals necessary for the satisfactory

**2.22 CURBING REMOVED AND RESET (ITEM 23)**

- A. Measurement: Per linear foot measured along the face of the curbing as shown on the Drawings and as specified herein, and as directed and accepted by the City.

- B. Payment: At the Contract Unit Price per linear foot and shall be full compensation for: removal, temporary stockpiling and resetting of existing granite or concrete curb, backfilling and compacting material behind the granite curb and for the loaming and seeding of impacted areas, and all incidentals necessary for the satisfactory

**2.23 POST AND RAIL FENCE REMOVED AND RESET (ITEM 24)**

- A. Measurement: Per section of post and rail fence, sections range from 4'-8' in length and 4' high, measuring from post to post as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per section complete in-place and shall be full compensation for the removal and temporary stockpiling of existing post and rail fence for reuse, furnishing and installing fence posts, post foundations, cross members, and all fence components, and all incidentals necessary for the satisfactory completion of the work.

**2.24 PICKET FENCE REMOVED AND RESET (ITEM 25)**

- A. Measurement: Per section of picket fence, sections range from 4'-8' in length and 4' high, measuring from post to post, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per section complete in-place and shall be full compensation for the removal and temporary stockpiling of existing picket fence for reuse, furnishing and installing fence posts, post foundations, slats, and all fence components, and all incidentals necessary for the satisfactory completion of the work.

**2.25 STOCKADE FENCE REMOVED AND RESET (ITEM 26)**

- A. Measurement: Per section of stockade fence, sections range from 4'-8' in length and 6' high, measuring from post to post, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per section complete in-place and shall be full compensation for the removal and temporary stockpiling of existing stockade fence for reuse, furnishing and installing fence posts, post foundations, slats, and all fence components, and all incidentals necessary for the satisfactory completion of the work.

**2.26 CHAIN LINK FENCE REMOVED AND RESET (ITEM 27)**

- A. Measurement: Per section of chain link fence, sections range from 4'-8' in length and 6' high, measuring from post to post, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per section complete in-place and shall be full compensation for the removal and temporary stockpiling of existing chain link fence for reuse, furnishing and installing fence posts, post foundations, fencing and all fence components, and all incidentals necessary for the satisfactory completion of the work.

**2.27 TIMBER GUARD RAIL REMOVED AND RESET (ITEM 28)**

- A. Measurement: Per linear foot complete in-place, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per linear foot complete in-place and shall be full compensation for the removal and temporary stockpiling of existing guard rail and posts for reuse, furnishing and installing as necessary new hardware for connections to posts; reinstalling guard rail and posts in concrete encasement, and all incidentals necessary for the satisfactory completion of the work.

**2.28 WOOD POST REMOVED AND RESET (ITEM 29)**

- A. Measurement: Per each, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per each and shall be full compensation for the removal and temporary stockpiling of existing wood post for reuse, furnishing and installing wood post, post foundation and all incidentals necessary for the satisfactory completion of the work.

**2.29 DUNE GRASS (ITEM 30)**

- A. Measurement: Per square foot of dune grass for restoring growth to all previously grassed areas within the limits of work that were disturbed during construction to the limits and depth as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per square foot and shall be full compensation for furnishing dune grass, grading, compacting, fertilizing, and maintenance of planted areas through the warranty period, and all incidentals necessary for the satisfactory completion of the work.

**2.30 TREE REMOVED AND RESET (ITEM 31)**

- A. Measurement: Per each, as shown on the Drawings and as specified herein, and as directed and accepted by the City.
- B. Payment: At the Contract Unit Price per each and shall be full compensation for removing and temporary storage and maintenance of tree; replanting of tree; soil and admixtures, preparing subsoil, fertilizer, and watering through the maintenance period as specified, and all incidentals necessary for the satisfactory completion of the work.

**2.31 MOBILIZATION (ITEM 32)**

- A. Measurement: Per lump sum.
- B. Payment: At the Contract Unit Price per lump sum and shall be full compensation for initiating the contract, exclusive of the cost of materials, for mobilizing all machinery, tools, and other equipment necessary to perform the work and for obtaining all permits not specifically included for payment under other pay items.

**END OF SECTION**

## **SECTION 02100**

### **SITE WORK**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. Provide all labor, equipment, materials and perform all operations necessary to complete the work of this Section as indicated within the Drawings and specified herein which shall include but is not limited to the following:
  - 1. Protection of existing site conditions to remain.
  - 2. Removal of trees and other vegetation.
  - 3. Removal of pavements and other hardscapes.
  - 4. Removal and/or resetting of existing site features.
  - 5. Demolition of miscellaneous structures, retaining walls, building foundations, steps, signage, fencing, and other appurtenances that interfere with construction.
  - 6. Abandonment and/or removal of utilities.
  - 7. Erosion and dust control.

##### **1.02 CODES AND STANDARDS**

- A. Perform demolition and clearing work in accordance with applicable rules, regulations, codes and ordinances of Local, State and Federal Authorities, and in accordance with the requirements of the City of Newburyport and the public utility corporations having jurisdiction over the work.

##### **1.03 DEFINITIONS**

- A. Remove (or Remove and Dispose): Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Reset: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

##### **1.04 PROJECT CONDITIONS**

- A. Examination of Conditions: The Contractor shall be solely responsible for judging the full extent of work requirements involved, including but not limited to the potential need for storing materials temporarily and/or rehandling items prior to final installation.

1. In order to record what exists in and around the work area and the condition of the existing improvements, the Contractor shall take at least three (3) color photographs, in digital format, suitable for identifying condition, color, texture, etc. The photographs shall be grouped and labeled by hydrant number, PV number, and/or street address, as appropriate. The Contractor shall submit these photographs to the City prior to performing any work.
- B. Traffic: Conduct site preparation and demolition operations to ensure minimum interference with roads and other active facilities. Do not close or obstruct roads or active facilities without permission from authorities having jurisdiction.

### **1.05 EXISTING SERVICES**

- A. Locations of existing utilities shown on the plan have been developed from existing utility records and/or above ground inspection of the site. Completeness or accuracy of locations or depth of underground utility or structures cannot be guaranteed. Contractor must verify the location and depth of all underground utilities or structures prior to the start of work.
  1. Call Dig-Safe at 811 or 1-888-344-7233 seventy-two (72) hours prior to excavation and construction. Record locations on Project Record Documents from Dig-Safe field location markings.
- B. Notify affected utility companies in advance and obtain written approval prior to commencing this Work. Coordinate and pay all applicable fees for disconnecting, removing, capping, and plugging utility services.
- C. The Contractor shall be responsible for the location, sealing, disconnection and/or protection of all existing utilities such as water, sewers, drains, electricity and telephone in accordance with the regulations of the utility concerned.
- D. Place markers to indicate location of disconnected services. Identify service lines and capping locations on Project Record Documents.

## **PART 2 - PRODUCTS**

### **2.01 REPAIR MATERIALS**

- A. Use repair materials identical to existing materials:
  1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
  2. Use materials whose installed performance equals or surpasses that of existing materials.

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. Before commencing site preparation and demolition work, the Contractor shall meet jointly with the City in order to discuss the procedures to be utilized. Contractor shall be held responsible for any damage to all vegetation designated to remain. The City will be sole judge as to damage inflicted.
  1. The City shall make the final determination of action required regarding any and all items indicated for removals, stockpiling, disposal, adjustment and protection.

- B. The Contractor shall give the City adequate advance notice of his readiness to start site and demolition work in order that the City can review the Contractor's plans for parking and access to the construction site.

### **3.02 EXAMINATION**

- A. Observe existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- B. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to City.

### **3.03 UTILITIES**

- A. Notify all corporations, companies, individuals or local authorities owning, or having jurisdiction over, utilities running to, through or across areas to be affected by demolition operations.
- B. Locate and identify existing utilities that are to remain and protect them from damage.
- C. Have all discontinued utility services disconnected in accordance with the requirements of the utility owner.

### **3.04 PROTECTION OF EXISTING CONDITIONS**

- A. Protection of Existing Improvements: Provide protections necessary to prevent damage to existing improvements indicated to remain in place. In the event of damage, immediately make all repairs and replacements necessary to the approval of the City at no additional cost to the City.
  - 1. Protect improvements on adjoining properties and on Owner's property.
- B. Replace damaged shrubs and other vegetation designated to remain with the same size and species.
- C. The Contractor shall be liable for all damage and/or disturbance to existing trees and shrubs not otherwise designated for clearing and removal. When the Contractor's operations damage trees and/or other vegetation to remain, comparable replacement shall be performed as approved by the City at full replacement cost to the Contractor.

### **3.05 DEMOLITION REQUIREMENTS**

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  - 1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
  - 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
  4. Maintain adequate ventilation when using cutting torches.
  5. Dispose of demolished items and materials promptly.
  6. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.
- B. Conduct demolition operations in accordance with the accepted demolition plan and in a manner that will prevent damage to adjacent structures, utilities, pavements and other facilities to remain.
- C. Cease operations immediately if any damage, settlement or other adverse effect on adjacent structures occurs. Immediately notify the City and regulatory authorities. Do not resume operations until conditions are corrected, damage repaired and approval has been received from the City.
- D. Provide hoses and water connections. Spray water on demolition debris to minimize dust.
- E. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing prior to start of work.
- F. Locate demolition equipment and remove materials in a manner that prevents excessive loading to supporting walls, floors, or framing.
- G. All hazardous waste removal shall be performed by a hazardous waste Contractor qualified and duly licensed by the Commonwealth of Massachusetts to remove, transport and dispose of each type of hazardous substance.
- H. Removed and Reinstalled Items: Comply with the following:
1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
  2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  3. Protect items from damage during transport and storage.
  4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- I. Existing Items to Remain: Protect existing items indicated to remain against damage and soiling during selective demolition. When permitted by City, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.
- J. Concrete: Demolish in small sections. Cut concrete to a depth of at least ¾-inch (19 mm) at junctures with construction to remain, using power-driven saw. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete indicated for selective demolition. Neatly trim openings to dimensions indicated.

### **3.06 DUST CONTROL**

- A. Maintain dust control at all times throughout the construction period. Control measures will be required in all areas as well as for stockpiles, temporary traffic ways, and all other areas where dust may develop.



- B. Provide positive methods and apply dust control materials to minimize raising dust from construction operations, and provide positive means to prevent air-borne dust from dispersing into the atmosphere.
- C. Calcium chloride shall be applied when ordered by the City and only in areas that will not be adversely affected by the application.
  - 1. Calcium chloride shall be uniformly applied at the rate of 1 1/2 pounds per square yard or at any other rate as directed by the City. Application shall be by means of a mechanical spreader, or other approved methods. The City shall determine the number and frequency of applications.

**3.07 SITE CLEARING**

- A. General: Remove trees, shrubs, grass, and other vegetation, improvements, or obstructions, as indicated within the Drawings and as required to permit installation of new construction. Remove similar items elsewhere on site or premises as specifically indicated. Removal includes digging out and off-site disposal of stumps and roots.

**3.08 REMOVAL OF EXISTING PAVEMENT AND CURBS**

- A. All items to be removed, stockpiled or designated for reuse shall include, but are not limited to those items as indicated on the Drawings.
- B. Remove existing bituminous concrete pavement, concrete pavement, concrete slabs and all other pavements as indicated on the Drawings. All material shall be removed and disposed of legally off-site daily, at no additional cost to the City.
- C. All sawed edges of paving shall be protected from damage until new is placed against it. Existing pavement that is damaged, disturbed or settled, shall be cut back by the same method and replaced as directed by the City at no additional cost to the City.

**3.09 PATCHING AND REPAIRS**

- A. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.

**3.10 DISPOSAL OF DEMOLISHED MATERIALS**

- A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning: Burning is not permitted.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

**3.11 GENERAL CLEAN-UP**

- A. Remove from site all trash, litter and debris and leave site in a neat and orderly condition on a daily basis and to the satisfaction and approval of the City.

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END OF SECTION

## SECTION 02140

### DEWATERING AND DRAINAGE CONTROL

#### PART 1 - GENERAL

##### 1.01 SUMMARY

- A. This Section specifies designing, furnishing, installing, maintaining, operating and removing temporary dewatering systems and the requirements for control of surface water within the work areas.
- B. The work includes:
  - 1. Control of surface water runoff to prevent flooding of excavations, trenches and adjacent properties, and the loosening and saturation of soils.
  - 2. Removal and disposal of subsurface water from excavations and trenches as required to lower and control water levels during construction.
  - 3. Provision of equipment and facilities to remove sediment and control the rates and volumes of disposal of surface and subsurface waters removed from the work areas.

##### 1.02 DEWATERING SYSTEM REQUIREMENTS

- A. The Contractor shall design the dewatering systems to:
  - 1. Effectively reduce the hydrostatic pressure and lower the groundwater levels to a minimum of two feet (2') below the bottom of excavations;
  - 2. Develop a substantially dry and stable subgrade for the proposed work;
  - 3. Prevent damage to adjacent properties, buildings, structures, utilities and other facilities;
- B. Locate dewatering facilities where they will not interfere with utilities and construction work to be done by others.
- C. Modify dewatering equipment and procedures when operations threaten to cause damage to new or existing facilities.
- D. Disposal of discharge waters shall be in accordance with all local, state, and federal regulations and as directed by the City.
- E. The Contractor shall be solely responsible for the proper design and execution of methods for controlling surface and groundwater. Design review and/or field monitoring activities by the City or City's representative shall not relieve the Contractor of his responsibilities for the work specified herein.

##### 1.03 SUBMITTALS

- A. Prior to installation of the dewatering system and at least two weeks prior to performing any excavation in areas that require dewatering, submit working drawings and design data for review by the City with the following information:
  - 1. The proposed types of dewatering system;
  - 2. Arrangement, location and depths of system components;
  - 3. Complete description of equipment and instrumentation to be used including installation, operation and maintenance procedures;
  - 4. Types and sizes of filters;

5. Design calculations demonstrating adequacy of the proposed system and equipment; and
  6. Provisions and methods of sediment removal and disposal.
  7. Provisions and methods of water removal and disposal.
- B. It is anticipated that the initial dewatering plan will have to be modified to suit the variable soil/water conditions encountered during construction. Modify the dewatering plan as often as necessary to meet the Specifications.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS AND EQUIPMENT**

- A. Furnish pumps, pipe, appliances, and equipment of capacity capable to keep the excavations free from water as necessary to complete the work as specified herein.

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. The Contractor shall control surface water and ground water such that the excavation to final sub-grade is made in the dry, the bearing soils are maintained undisturbed, and softening and/or instability or disturbance due to the presence or seepage of water not occur. All construction and backfilling shall proceed in the dry and floatation of completed portions of work shall be prevented.

### **3.02 SURFACE WATER CONTROL**

- A. Intercept and divert surface water runoff away from excavations through the use of dikes, curb walls, ditches, pipes, sumps or other approved means.
- B. Provide and maintain ditches of adequate size to collect and prevent surface and subsurface water seepage from entering the excavations. Divert the water to settling basins or other approved equipment required to reduce the amount of fine particles before discharge into drainage pipes and natural watercourses. If a drainage system or watercourse becomes silted due to dewatering operation, the Contractor at no additional cost to the City shall clean it.

### **3.03 DEWATERING EXCAVATIONS**

- A. Accomplish dewatering in accordance with the means and methods submitted as required in Article 1.04 and approved by the City. Keep the City advised of any changes required to accommodate field conditions and, on completion of the dewatering system installation, revise and resubmit the information required to show the installed system.
- B. Perform dewatering operations to lower the groundwater level in excavations as required to provide a stable, dry sub-grade for the prosecution of the proposed work.
- C. Maintain dewatering operations in a manner that prevents buildup of excessive hydrostatic pressure and damage to structures, and the sub-grade.
- D. Do not allow water to accumulate in excavations. The Contractor shall provide and maintain at all times ample means and devices to remove promptly, and to dispose of properly, all water entering excavations and to keep them dry until the proposed work is completed.
- E. If the Contractor's method of dewatering does not properly dewater the excavation as specified, then the Contractor shall install groundwater observation wells, as directed by the City, and implement a revised dewatering plan that lowers the groundwater a minimum of 6 inches below the bottom of final excavation elevation, at no additional cost to the City.

- F. No pipe shall be laid in water. No masonry shall be laid in water, and no water shall be allowed to rise over concrete and brick masonry within 24-hours after being placed. Water shall not be allowed to rise over any concrete and masonry for four days. The Contractor shall constantly guard against the possibility of flotation of pipe or structures after installation. Backfill or other means shall be placed promptly to prevent this occurrence.
- G. Dewatering units used in the work shall be surrounded by suitable filter media such that no fines shall be removed by pumping. Pumping shall be continuous until pipe or structure is adequately backfilled. Stand-by pumps shall be provided.
- H. Dewatering flows shall be disposed of in an area approved by the City. Sanitary sewer systems shall not be used to dispose of dewatering flows.

**3.04 RECORDS FOR WELL SYSTEMS**

- A. When well point, or other type of well systems, are used for dewatering, the following information shall be obtained and recorded:
  - 1. The average flow rate and time of operation of each pump used in the dewatering system. Provide appropriate devices, such as flow meters, for observing the flow rates. Submit the data, in tabular form, during the period that the dewatering system is in operation.
  - 2. The groundwater elevations during the period that the dewatering system is in operation. Submit observation records daily within 24-hours of reading.
  - 3. During the initial period of the dewatering, make required observations on a daily basis. If, after a period, dewatering operations have stabilized, observations may be changed to longer intervals, as accepted by the City.

END OF SECTION

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## SECTION 02200

### EARTHWORK

#### PART 1 GENERAL

##### 1.01 DESCRIPTION

- A. Work to be done under this Section includes, but is not limited to, providing all labor, materials, equipment, and incidentals as necessary to the conduct and complete the Work specified herein and shown on the Drawings.
1. Excavate all materials, including soil, boulders, abandoned utilities, pavements, curbs, granite blocks, and all other materials as necessary to construct the site improvements shown on the Drawings.
  2. Excavate by methods that will permit observation of soils for the purpose of identifying, screening, testing, and segregating soils as necessary prior to on-site reuse. The excavated soil will be classified by the City according to the criteria contained herein and stockpiled for on-site reuse or off-site disposition. Soils to be segregated include but may not be limited to:
    - a. Unacceptable Soil Material
    - b. Topsoil
    - c. Contaminated Material
    - d. Solid Waste
    - e. Acceptable Soil Material
  3. The Contractor shall be responsible for handling, loading, stockpiling, on-site transport, on-site storage, and legal off-site disposal of excavated soils.
  4. Preserve and protect existing and new site improvements during the course of the Work.
  5. Preserve and protect adjacent structures that are to remain during the course of the Work.
  6. Prepare, grade, shape, compact and protect all subgrades, backfills, and ground surfaces as shown on the Drawings.
  7. Furnish materials, specified herein, from off-site approved source(s) as needed to complete the Work.
  8. All excavation, backfilling, filling and rough grading required for the construction of pavements and structures and compaction thereof.
  9. Excavation and backfilling for underground utilities and appurtenances.
  10. Furnish, install, and maintain sheeting and bracing, if necessary, to protect excavations against soil cave-in due to the earthwork performed under this Contract.
  11. Place and compact backfill materials required to construct the proposed site improvements as shown on the Drawings.
  12. Segregate, handle, stockpile, manage, and reuse suitable excavated materials. The Contractor shall mechanically screen on-site soils to remove debris as directed by the City prior to reuse. Only soils approved by the City shall be reused on-site.
  13. Off-site disposal of Contaminated Material, if required, shall not be conducted without approval of the Owner and the City.

14. Off-site disposal of Topsoil and Excess Acceptable Soil Material shall not be conducted without approval of the City.
15. The Contractor shall be solely responsible for impacts and damage to any existing structure due to his/her work, and for corrective action or repairs needed to restore the structure(s) to original condition at no additional cost to the City.

## 1.02 DEFINITIONS AND REFERENCES

- A. The following terms will be used throughout this Section. The definition given for the term will be understood to be the intent of the term used:
  1. Acceptable Soil Material: Existing in-situ soil fill or natural material including, but not limited to, sand, sandy gravel, gravel, or Ordinary Borrow-type material as defined by MHDSSHB, with trace amounts of silt, ash, cinders and fragments of concrete, and not as otherwise classified as Unacceptable Soil Material.
  2. Unacceptable Soil Material: Soil material which contains organic silt, peat, clay, vegetation, wood or roots, stones or rock fragments over 6-inches in diameter, porous biodegradable matter, loose or soft fill, construction debris, or refuse.
  3. Solid Waste: Material including building debris; brick, wood, concrete, etc., granite blocks, ash and cinders, cobbles and boulders shall be stockpiled separately from other materials and classified as Solid Waste. Solid Waste, which has been separated from the soil, will not be subject to analytical testing to determine disposition of the debris for off-site disposal.
  4. Contaminated Material: Soil material that is contaminated by a release of oil and/or hazardous material and for which notification is required by 310 CMR 40.0300 and not classified by 310 CMR 30.00 as a RCRA Hazardous Waste.
- B. Percent compaction is defined as the ratio of the field dry density, as determined by ASTM D-2922 to the maximum dry density, determined by ASTM D-1557, multiplied by 100.
- C. ASTM: Specifications of the American Society for Testing and Materials.
- D. Code: Eighth (or latest) Edition of Massachusetts State Building Code.
- E. USEPA: United States Environmental Protection Agency.
- F. OSHA: Occupational Health and Safety Administration.
- G. MCP: Massachusetts Contingency Plan.
- H. MHDSSHB: Massachusetts Highway Department Standard Specifications for Highways and Bridges, 1988 or latest edition.
- I. MHD or MDOT: Massachusetts Department of Transportation (MassDOT) Highway Division (formerly MassHighway Department).
- J. City: City Engineer, City's Field Rep or other authorized representative of the City.
- K. Zone of Influence: The zone beneath imaginary lines extending from points 2-feet laterally beyond footing outer edges and down on a 1H:1V slope.

## 1.03 EXCAVATION CLASSIFICATIONS

- A. Excavation: Excavation shall be unclassified and no consideration will be given to the nature of the materials. Excavation shall comprise and include the satisfactory removal and disposal of all materials encountered regardless of the nature of the materials and shall be understood to include, but not be limited to, soil, fill, foundations, pavements, curbs, boulders, piping, railroad track and ties, cobblestones, footings, bricks, concrete, previously abandoned



drainage and utility structures, and debris, and not as otherwise classified as Contaminated Material.

- B. Rock Excavation: Rock is defined for payment purposes as stone or hard shale in original ledge, boulders over two cubic yards (2yd<sup>3</sup>) in volume in open areas and one cubic yard (1yd<sup>3</sup>) in volume in trenches, and masonry or concrete that cannot be broken or removed by normal job equipment (power shovels, scoops, or D-8 bulldozers with ripper attachment) without the use of explosives or drills. The classification does not include materials that can be removed by means other than drilling and blasting or drilling and wedging but which, for reasons of economy in excavating, the Contractor prefers to remove by drilling and blasting. The word "trenches" shall mean excavation having vertical sides the depths of which exceed the width, made for drain, sewer, water, and gas pipes; electric and steam conduits; and the like.

#### 1.04 JOB CONDITIONS

- A. Prior to submitting his bid, the Contractor shall review and understand the information provided. The subsurface information is made available to the Contractor for information on factual data only and shall not be interpreted as a warranty of subsurface conditions whether interpreted from written text, boring logs or other data.

#### 1.05 QUALITY CONTROL

- A. The City may retain and pay for the services of a Geotechnical Consultant to perform on-site observation and testing during construction operations. The scope of services will be determined by the City and the Geotechnical Consultant. The City reserves the right to modify or waive Geotechnical Consultant services.
- B. The Geotechnical Consultant's presence does not include supervision or direction of the actual work by the Contractor, his employees or agents. Neither the presence of the Geotechnical Consultant, nor any observations and/or testing performed by him, nor any notice or failure to give notice shall excuse the Contractor from defects discovered in his work.
- C. The Contractor shall adhere to the applicable requirements of the Standard Specifications, OSHA Standards and to all other applicable ordinances, codes, statutory rules, and regulations of federal, state, and local authorities having jurisdiction over the Work of this Section.
- D. The Contractor may conduct additional field and laboratory testing or screening tests for his/her own information at no additional cost to the City.
- E. Work not in conformance with the specified requirements shall be improved, or removed and replaced, at no additional cost to the City. All costs related to testing of nonconforming Work or materials shall be paid for by the Contractor, at no additional cost to the City.
- F. Tolerances:
1. Construct finished soil and backfill surfaces to the grades and elevations indicated on the Drawings.
  2. Maintain the moisture content of fill material as it is being placed within plus or minus two percent of the optimum moisture content of the material as determined by the laboratory tests specified herein.

#### 1.06 SUBMITTALS

- A. The City will be responsible for the approval or rejection of the suitability of all materials.
- B. Submit the name of each material supplier and specific type and source of each material. Submit necessary testing results (sieve analysis) to document that materials meet the requirements of the specific use for which it is intended. Any change in source throughout the job requires approval of the City.

- C. For use of fabrics or geogrids, submit manufacturer's literature for approval by the City.

#### **1.07 EXISTING UTILITIES**

- A. Provide protection as necessary to prevent damage to existing utilities to remain. Refer to the Drawings to determine which utilities are to be removed, replaced, or relocated as part of the Work.
- B. Prior to beginning any excavation or fill placement, accurately locate and mark underground utilities and appurtenances in the site area.
- C. Should an uncharted, or incorrectly charted utility be encountered during excavation, consult utility owner immediately for directions. Cooperate with City and public and private utility companies in keeping respective facilities and services in operation. Repair damaged utilities to the satisfaction of utility company.
- D. In case of any damage or injury caused in the performance of work the Contractor shall, at his own expense make good such damage or injury to the satisfaction of, and without cost to, the City.
- E. Existing utilities to remain that are damaged during the project work shall be repaired or replaced to their condition prior to commencement of earthwork operations. Inactive or abandoned utilities encountered during construction operations shall be removed to the extent directed by the Owner. The location of any such utilities allowed to remain by the Owner shall be noted on the Record Drawings.

### **PART 2 PRODUCTS**

#### **2.01 MATERIALS**

- A. All materials to be imported to the site shall not contain detectable amounts of oil and/or hazardous materials as defined by the Massachusetts Contingency Plan (CMR 40.0000).
- B. Ordinary Fill: Ordinary Fill shall consist of Acceptable Soil Material and shall be of well-graded, natural, mineral soil free from organic materials, loam, wood, snow, ice, frozen soil cinders, asphalt, brick, concrete, trash, debris and other weak, compressible, or deleterious materials. The material shall not contain materials subject to decay, decomposition, or dissolution.

Ordinary Fill shall not contain particles larger than four (4) inches in maximum dimension and shall have a maximum of 80 percent passing the No. 40 sieve and a maximum of 20 percent passing the No. 200 sieve. It shall have physical properties such that it can be readily spread and compacted to the specified densities in a reasonable length of time.

On-site fill soils meeting the requirements for Acceptable Soil Material defined in Paragraph 1.02 of this section may be used as Ordinary Fill. The Contractor shall mechanically screen on-site soils to remove debris prior to reuse as directed by the City. Only those soils approved by the City shall be reused on-site.

- C. Dense Graded Crushed Stone for Pipe Bedding: DGCS shall conform to the requirements of item M2.01.7 of the MHDSSHB except as modified below:

100% passing 1/2" sieve

70%-100% passing 3/8" sieve

- D. Flowable Fill: Flowable Fill shall consist of a commercial mixture of flyash and cement with a minimum 28-day compressive strength of 200 psi.
- E. Gravel Borrow: Gravel Borrow shall be as specified in Section M1.03.0 Type c of the MHDSSHB.

- F. Sand Borrow shall be as specified in Section M1.04.0 Type b of the MHDSSHB and shall consist of clean, inert, hard, durable grains of quartz or other hard durable rock, free from clay or loam, surfacing coatings, and deleterious materials.
- G. Topsoil: Shall comply with MHDSSHB Section M1.07.0.

### **PART 3 EXECUTION**

#### **3.01 GENERAL EXCAVATION REQUIREMENTS**

- A. Protect structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Material, if stockpiled, shall be stored so as not to interfere with the established sequence of the construction. If there is not sufficient area available to stockpile Acceptable Soil Material and Topsoil within the limits of the project, the Contractor is responsible for providing off-site staging or stockpile areas.
- C. Excavation Limitations:
  - 1. Stability of excavations and job safety are the sole responsibility of the Contractor. Limit the excavation open at any one time as to reduce conditions dangerous to personnel, equipment and existing site improvements, all according to site conditions. The Contractor's operations shall be in strict compliance with OSHA Regulations.
  - 2. Excavate only to width and depth indicated to provide clearance for utility structures or foundations.
  - 3. Excavate by use of hand tools when within 2-feet of existing pipes, conduits, or other structures.
  - 4. Perform open cut excavation so as not to endanger personal safety. Do not undermine existing structures or utilities.
- D. Over-Excavation:
  - 1. When any excavation is extended beyond the limits indicated without written consent of the City, backfill and compact the additional excavated area with material indicated to be under the pipe, conduit, or other structure, which was being excavated. This over-excavation and placement of material will be at no additional cost to the City.
- E. Dewatering:
  - 1. Perform dewatering operations in accordance with Section 02140 in order to maintain excavated subgrades in a dry condition.
  - 2. All excavation and backfilling shall be performed in-the-dry.
- F. Support of Excavation and Underpinning:
  - 1. Provide excavation support and underpinning systems to perform the following:
    - a. Provide safe personnel access and working conditions within the excavation itself.
    - b. Limit the extent of excavation to prevent damage to adjacent structures and utilities.
    - c. Coordinate the extent of excavation to prevent disruption of other trades or disrupt the progress of others.

G. Unacceptable Subgrade:

1. Remove soft or loose material if encountered at the subgrade. After removal, backfill with flowable fill, compacted granular fill, or Acceptable Material meeting density requirements of materials indicated to be placed on the subgrade.
2. Subgrade soil subject to disturbance from exposure or working conditions shall be excavated and replaced with flowable fill, compacted granular fill, or Acceptable Material meeting the requirements of materials indicated to be placed on the subgrade.

- H. Topsoil. Strip topsoil and stockpile as required at the jobsite at locations approved by the City . Prevent topsoil from contamination by other materials, and provide adequate drainage and erosion protection. Clear, grub, and rough-grade storage areas as appropriate remove organic material or accumulated debris.

**3.02 DUST CONTROL**

- A. Maintain dust control at all times throughout the construction period. Control measures will be required in all areas as well as for stockpiles, temporary traffic ways, and all other areas where dust may develop.
- B. Dust control procedures shall be monitored by the City and shall be subject to on-site review.
- C. Earthwork may be halted as deemed necessary should dust control procedures prove inadequate.

**3.03 STORAGE OF SOIL MATERIALS**

- A. Stockpile Acceptable Soil Material, Topsoil and Contaminated Material (if encountered) without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent erosion and install sediment controls. Stockpile soil materials a minimum of 10-feet from edge of excavations or as otherwise required by Federal, State, or local regulations.

**3.04 PROTECTION OF EXISTING UTILITIES**

- A. Restore or replace damaged utilities at no additional cost to the City to the original condition before the Work was begun.
  1. Protect from damage, at no additional cost to the City, existing pipes, poles, wires, fences, property line markers, structures and site improvements which the Owner decides are to remain.
  2. Restore existing property or structure as soon as directed by the Owner.
- B. Protection of Existing Utilities:
  1. Provide temporary support for permanent utilities encountered during excavation such that the load is gradually transferred from the soil to the supports.

**3.05 EXCAVATION**

- A. General:
  1. Excavate by machine, conforming to requirements in the following paragraphs, to the indicated foundation preparation subgrade.
  2. Proof-compact any exposed subgrade soils prior to placement of subgrade preparation material.
- B. Depth of Trench: Excavate trench to permit subgrades to be laid or constructed at elevations, slopes, and depths of cover indicated.

- C. Width of Trench: Excavate trenches to the dimensions shown on the Drawings. Do not widen trenches by scraping or loosening materials from the sides of the excavation. Maintain sides of trenches firm and undisturbed until backfilling and compaction has been completed.
- D. Bottom of Trench: Excavate trenches to the subgrade levels, allowing for placement of granular fill, or crushed stone.

### **3.06 SUBGRADE PREPARATION**

- A. Unsuitable material, such as construction debris, organic matter, or other deleterious materials, shall be removed when exposed at soil subgrade level and replaced with compacted gravel borrow, crushed stone or flowable fill.
- B. Care shall be taken to avoid disturbance to subgrades.
- C. Provide a firm, smooth, stable, undisturbed subgrade as judged by the City . Subgrades shall be prepared in-the-dry.
- D. Movement of construction equipment directly over exposed subgrades shall not be permitted.
- E. Subgrades beneath pavements shall be compacted with a minimum of two (2) passes in each of two perpendicular directions of a self-propelled vibratory roller imparting a minimum of 30,000-pounds dynamic force.
- F. Place the subgrade preparation material within one day of excavation or sooner to prevent disturbance to the subgrade.

### **3.07 BACKFILL AND COMPACTION**

- A. Placement:
  - 1. Place and compact fill to the limits specified herein, and shown on the Drawings in order to complete the Work. Unless other material is indicated on the Drawings, place Acceptable Soil Material as backfill for trenches and around structures. If sufficient Acceptable Soil Material is not available from the excavations, provide approved off-site granular fill material at no additional cost to the City.
  - 2. Do not place frozen fill. Do not place fill, susceptible to freezing, in temperatures less than 32 degrees Fahrenheit. Do not place fill on frozen ground.
  - 3. Slope fill surfaces at the end of each day to provide for free surface drainage.
  - 4. Placement of fill shall not begin prior to observation and approval of subgrade conditions by the City. The Contractor shall not place any fill material in the absence of the City.
  - 5. If excessive weaving or instability, as judged by the City, during compaction is observed, compaction efforts shall be discontinued until the Contractor stabilizes the subgrade. If required, the Contractor shall excavate and replace the unstable fill material with acceptable compacted material at no additional cost to the City.
  - 6. Dewater all subgrades prior to filling as required to prevent disturbance. Place all fill in-the-dry.
  - 7. Compaction by puddling or jetting is prohibited.
  - 8. Control groundwater and surface run-off to minimize disturbance of material being placed.
  - 9. Whenever placing fill, provide suitable transition layers or non-woven filter fabric as required to prevent the migration of fine material into void spaces of coarser material.
  - 10. Where fill material meets previously existing grades, provide a smooth transition to meet existing grades.

11. Protect structures and pipes from damage during backfilling operations.
  12. Protect existing and new site improvements during construction operations. Repair damage at no additional cost to the City.
  13. Backfill and compact indicated material under, around, and above tunnel structures to the indicated compaction density requirement. Utilize compaction devices such as: pogo, jack-hammer, or hand tampers, which will not damage the tunnel structure within the trench.
  14. Do not drop Backfill material into trench from a height of more than 5-feet., or in a manner which will damage the structure within trench.
  15. To a reasonable degree, backfill on-site material at approximate elevations from which it was excavated.
  16. Place material evenly around structure to maintain equal soil pressure on all sides of structures.
  17. Backfill beneath sidewalks and pavements as indicated on the Drawings.
- B. Lift Thickness of Material:
1. Place fill in uniform horizontal layers.
  2. Granular Fill: Place in layers not to exceed 9-inches in thickness prior to compaction when utilizing heavy self-propelled vibratory compaction equipment, and 6-inches when utilizing hand-operated compaction equipment. In general, compact material with a minimum of four complete coverages per lift.
  3. Ordinary Fill: Place in layers not to exceed 12-inches prior to compaction in thickness when utilizing heavy self-propelled vibratory compaction equipment, and 6-inches when utilizing hand-operated compaction equipment. Compact material with a minimum of four complete coverages per lift.
  4. Crushed Stone: Place in layers not to exceed 12-inches in thickness prior to compaction when utilizing heavy self-propelled compaction equipment, and 6-inches when utilizing hand-operated compacted equipment. Compact with a minimum of four coverages per lift.
- C. Compaction Requirements: The degree of compaction is expressed as the in-place fill dry unit weight as a percentage of the maximum dry density at optimum moisture content as determined by ASTM Test D1557, Method C. The minimum compaction requirements are as follows:

<u>Area</u>	<u>Minimum Degree of Compaction (ASTM D1557)</u>
Landscape and Lawn areas	90%
Below soil-supported slabs, foundations, and other structures	95%
Pavement Gravel Base	95%
Trench Backfill	95%
Adjacent to Building Foundation Walls and Manhole Structures	95%
Within 3 ft directly below sidewalks, pavements, and exterior concrete slabs	95%

END OF SECTION

## SECTION 02500

### ROADWAYS, SIDEWALKS, AND CURBS

#### PART 1 - GENERAL

##### 1.01 SUMMARY

- A. This Section specifies the requirements for bituminous concrete roadway, temporary trench, and driveway pavements including pavement base course materials. This section also specifies the requirements for bituminous and cement concrete sidewalks and roadway curbing.

##### 1.02 REFERENCE STANDARDS

- A. References herein are made in accordance with the following abbreviations and all work under this Section shall conform to the latest editions as applicable:
1. MS-2: Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types - The Asphalt Institute (AI).
  2. MS-3: Asphalt Plant Manual - The Asphalt Institute (AI).
  3. Hot Mix Asphalt Paving Handbook - US Army Corps of Engineers, UN-13 (CE MP-ET).
  4. MS-19: Basic Asphalt Emulsion Manual - The Asphaltic Institute (AI).
  5. ASTM D946—Specification for Penetration - Graded Asphalt Cement for use in Pavement Construction.
  6. ACI 301 - Specifications for Structural Concrete for Building
  7. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete
  8. ACI 305R - Hot Weather Concreting
  9. ACI 306R - Cold Weather Concreting
  10. ACI 316R - Recommendations for Construction of Concrete Pavements and Concrete Bases
  11. ASTM 185 - Welded Wire Steel Fabric for Concrete Reinforcement
  12. ASTM C33 - Concrete Aggregates
  13. ASTM C94 - Ready-Mixed Concrete
  14. ASTM C143 - Slump of Portland Cement Concrete
  15. ASTM C150 - Portland Cement
  16. ASTM C171 - Sheet Materials for Curing Concrete
  17. ASTM C231 - Air Content of Freshly Mixed Concrete by the Pressure Method
  18. ASTM C260 - Air Entraining Admixtures for Concrete
  19. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete
  20. ASTM C494 - Chemical Admixtures for Concrete
- B. Except as otherwise specified herein, the current Standard Specifications for Highways and Bridges, including all addenda, issued by the Commonwealth of Massachusetts, Department of

Public Works, latest edition (MHDSHB) shall apply to materials and workmanship required for the work of this Section.

- C. Walkways shall comply with Massachusetts Architectural Access Board Code of Massachusetts Regulations 521CMR and the Federal Americans with Disabilities Act.

### **1.03 QUALITY ASSURANCE**

- A. Work and materials for construction of the cement concrete walks shall conform to ACI 316R. Other cast-in-place concrete shall conform to ACI 301.
- B. Work, materials, and color of the wheelchair ramp paving shall conform to applicable sections of Americans with Disabilities Act (ADA) and State standards, whichever is more stringent.

### **1.04 SUBMITTALS**

- A. Bituminous Concrete Design Mix: Before any paving is constructed, submit actual design mix to the Engineer for review and approval. Design mix submittal shall follow the format indicated in the Asphalt Institute Manual MS-2, Marshall Stability Method; and shall include the type/name of the mix, gradation analysis, grade of asphalt cement used, Marshall Stability (lbs.), flow, and effective asphalt content (percent).
- B. Bituminous Concrete Material Certificates: Submit materials certificate signed by the material producer and Contractor, to the independent testing laboratory certifying that materials comply with, or exceed, the requirements herein.
- C. Cement Concrete Design Mixtures: For each concrete mixture, submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
  - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
  - 2. Indicate the design strength of the concrete, slump, the mix proportions, brand and type of cement, aggregate source, admixtures, percent entrained air and water-cement ratio.
- D. Material test reports for aggregates, including service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.
- E. Material Certificates: For each of the following, signed by manufacturers:
  - 1. Cementitious materials
  - 2. Admixtures.
  - 3. Form materials and form release agents.
  - 4. Steel reinforcement and accessories.
  - 5. Bonding agents.
  - 6. Adhesives.
- F. Submit Shop Drawings and Manufacturer's literature for granite and precast curb, edging, corners and inlets, indicating size, shape and dimensions, finish and setting method for Engineer's approval.

### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Curbing units shall be adequately protected from damage during transit to the site.
- B. Curbing shall be protected against staining, chipping, and other damage. Cracked, badly chipped, or stained units will be rejected and shall not be employed in the work.



**1.06 COORDINATION**

- A. The contractor shall coordinate paving with all other work, especially underground utility construction, to prevent covering up unfinished or uninspected work and loss of time or labor by improper scheduling. Any repaving required shall be done at no additional cost to the Owner.

**1.07 GUARANTEE**

- A. All pavement placed shall be maintained by the Contractor for a period of one year. During this period, all areas that have settled or are unsatisfactory for traffic and as directed by the Engineer or Owner shall be replaced at no additional cost to the Owner.

**PART 2 - PRODUCTS**

**2.01 STONE BASE COURSES**

- A. Dense Graded Crushed Stone for base and sub-base shall conform to the requirements of MHDSSHB Section M.2.01.7.
- B. Gravel Borrow shall conform to the requirements of MHDSSHB Section M.1.03.0 Type c.

**2.02 BITUMINOUS CONCRETE PAVEMENT**

- A. Mineral Aggregate: Comply with the requirements of MHDSSHB M3.11.04.
- B. Asphalt Cement: Comply with AASHTO M-226/ASTM D 3381; Table 2 for grades AC-10, AC-20, or AC-30, AR-8000, viscosity grade, depending on local mean annual air temperature, as specified in MHDSSHB M3.11.03 Table A.
- C. Mineral Filler: Comply with the requirements of AASHTO M-17/ASTM D 242 and MHDSSHB M3.11.05.
- D. Asphalt-Aggregate Mixture: the design mix shall have a minimum stability based on a 50-blow Marshall Method, complying with AASHTO T245 (ASTM D 1559), of 1200 lb. with a flow between 8 and 16. The Design Mix shall be as specified in Table A of MHDSSHB M3.11.03.
  - 1. Bituminous concrete pavement wearing or top course shall conform to the requirements for Modified Top Course as specified in Table A. The maximum allowable percentage of wear, as determined by the L.A. Abrasion Test (AASHTO-T96), shall be 35 percent.
  - 2. Bituminous concrete pavement binder course shall conform to the requirements for Dense Binder Course as specified in Table A. The maximum allowable percentage of wear, as determined by the L.A. Abrasion Test (AASHTO-T96), shall be 35 percent.
  - 3. Bituminous concrete pavement for sidewalks and driveways shall conform to the requirements for Dense Mix as specified in Table A. The maximum allowable percentage of wear, as determined by the L.A. Abrasion Test (AASHTO-T96), shall be 35 percent.
  - 4. Bituminous concrete pavement for trenches shall conform to the requirements for Binder Mix as specified in Table A.
- E. Tack coat, where required, shall be asphalt emulsion, grade RS-1.

**2.03 CEMENT CONCRETE**

- A. Cementitious Material: Use Portland Cement conforming to ASTM C150, Type II, of the same type, brand, and source, throughout Project.
- B. Cement concrete shall meet the following requirements:
  - 1. 4000 psi compressive strength, unless noted otherwise on the Drawings.
  - 2. Maximum water : cement ratio of 0.45 conforming to ACI 316R.

3. Air-entrained conforming to ASTM C94. Air content by volume shall be 6% +/- 1%, in accordance with ASTM C260.
  4. Slump between 3 and 4-inches as determined by ASTM C143.
  5. Include a water reducing agent conforming to ASTM C494, Type A.
  6. Containing no calcium chloride or admixtures containing calcium chloride.
- C. Normal-Weight Aggregates: ASTM C33, Class 4S coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.
1. Maximum Coarse-Aggregate Size: 1-1/2 inches nominal.
  2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- D. Water: ASTM C94/C94M and potable.
- E. Reinforcing: Concrete shall be fiber-reinforced.
- F. Expansion Joint Material:
1. Compressible filler: Provide asphalt impregnated preformed expansion joint filler which shall be non-extruding, resilient and shall conform to AASHTO M213 requirements for premolded rigid cane fiber board impregnated throughout with asphaltic compound.
    - a. The Contractor shall provide certificate that the asphalt cement content is at least 35% by weight of the filler.
    - b. All expansion joints shall be a minimum of 1/2" thick and full depth of slab thickness.
  2. Joint sealer: For use at expansion joints shall meet Federal Specification TT-S-00230C, Type II, Class A, and shall be a sealing compound, synthetic, rubber case, single component, chemically curing material.
- G. Form Materials:
1. The contractor shall utilize steel, wood, or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal.
    - a. Use straight forms, free of distortion and defects.
    - b. Use flexible spring steel forms or laminated boards to form radius bends as required.
  2. Coat forms with a non-staining form release agent that will not discolor or deface surface of concrete.
- H. Curing Materials:
1. Absorptive Cover: AASHTO M182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
  2. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.
  3. Water: Potable.
- I. Concrete Mixing:
1. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C94/C94M, and furnish batch ticket information.

When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

2. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C94/C94M. Mix concrete materials in appropriate drum-type batch machine mixer.
  - a. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
  - b. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd.
  - c. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

#### **2.04 GRANITE CURB**

- A. Granite curb shall be basically light gray in color, free from seams and other structural imperfections or flaws which would impair its structural integrity, and of a smooth splitting appearance. Natural color variation characteristic of the deposit from which the curb is obtained will be permitted.
- B. Granite curb shall meet the requirements for Granite Curb Type VB per MHDSSHB M9.04.01.
- C. Whenever curbing is sawed, all surfaces that are to be exposed shall be thoroughly cleaned and any iron rust or iron particles removed by sand blasting or other methods approved by the City and any saw mark in excess of 1/8-inch shall be removed.

#### **2.05 CURB TRANSITION SECTIONS**

- A. Horizontal transition sections shall be provided at all locations where curb sections change (i.e., vertical to sloped). Vertical transition sections shall also be provided for curb sections at wheelchair ramps. Vertical transition sections for granite curb shall be made as shown on the Drawings.

### **PART 3 - EXECUTION**

#### **3.01 BITUMINOUS CONCRETE PAVEMENT**

- A. The Contractor shall install all pavements in the location and to the grades shown on the Drawings, or approved by the Engineer. The type and thickness of pavement courses shall be as shown on the Drawings.
- B. All work and equipment shall be as specified in MHDSSHB Section 460.
- C. Materials for pavement shall be mixed, delivered, placed and compacted in accordance with Massachusetts Highway Standard Specifications, Sections M3.11 and 460 and as specified herein.
- D. Temporary Trench Pavement
  1. Where specified and as directed by the Engineer and after placement of the gravel subbase, temporary hot mix asphalt pavement shall be placed above the trench, between the edges of the existing pavement. Temporary trench pavement shall be installed to the dimensions shown on the drawings.

2. The temporary trench pavement shall be repaired as necessary to maintain the surface of the pavement until completion of the contract. When a depression of one half inches in depth is observed, the Contractor shall apply a leveling course of hot mix asphalt.

E. Field Quality Control

1. Independent Testing Laboratory, selected and paid by Owner, may be retained to perform construction testing of in-place hot mix asphalt courses for compliance with requirements for thickness and surface smoothness.
2. Thickness: In-place compacted thickness shall not be less than thickness specified on the drawings. Areas of deficient paving thickness shall receive a tack coat and a minimum one-inch (1") compacted thickness overlay; or shall be removed and replaced to the proper thickness, at the discretion of the Engineer, until specified thickness of the course is met or exceeded at no additional cost to the Owner.

F. Meeting Existing Pavements:

1. Where new pavements will abut existing pavements, the Contractor shall sawcut the existing pavements to produce a uniform, smooth joint surface. Sawcutting of existing pavements shall be neat, straight and even lines, and done in a manner that prevents damage to the pavement to remain.
2. Full-Depth Pavement—Sawcut by approved method to the full depth of the pavement prior to placement of any new pavement. The sawcut surface shall be a neat true line with straight vertical edges free from irregularities. The sawcut surface shall be tack coated immediately prior to the installation of the new abutting hot mix asphalt material to provide a bond between the old and new pavement. The new compacted pavement surface shall be finished flush with the abutting pavement.
3. Bituminous Concrete Overlays: The existing bituminous concrete pavement shall be sawcut to a neat true line with straight vertical edges free of irregularities for a minimum depth of one and one half inches. One and one-half inches of pavement shall be removed to form a transition section across the entire pavement width and with a length of two feet at driveways and six feet in roadways and parking areas. Immediately prior to the placement of the bituminous concrete overlay, the sawcut edges of the existing pavement shall be tack coated to bond the new pavement to the old pavement. The new pavement surface shall be finished flush with the abutting pavement. The surface seam of the pavement joint shall be sealed with tack coat and back sanded.

**3.02 CEMENT CONCRETE**

- A. Inspect all surfaces and verify that they are in proper condition to receive the work of this Section. Remove loose material from compacted sub-base surface immediately before placing concrete.
- B. Proof-roll prepared sub-base surface to check for unstable areas and need for additional compaction. Do not begin paving work until such conditions have been corrected and are ready to receive paving.
- C. Formwork:
  1. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
  2. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
  3. Construct forms tight enough to prevent loss of concrete mortar.

4. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces.
  5. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
  6. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
  7. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.
- D. Expansion Joints:
1. General: Construct expansion joints true to line with face perpendicular to surface of concrete. If joints are not installed and constructed as indicated within the drawings and specified herein the Engineer shall instruct the Contractor to remove and dispose those areas identified as non-compliant. The Contractor shall repair, replace or install new concrete in those areas identified at no additional cost to the owner.
  2. Verify location of expansion joints as indicated within the drawings and their relationship to other work.
  3. Where expansion joints are not shown, the Contractor shall provide expansion joints a minimum twenty (20) feet on center in any direction and where concrete abuts all vertical surfaces and/or fixed construction including but not limited to; buildings, structures, walls, stairs, light poles and curbs.
  4. Provide premolded joint filler for expansion joints abutting curbs, catch basins, manholes, inlets, structures, walks, and all other fixed objects, unless otherwise indicated.
  5. Protect top edge of joint filler during concrete placement with a metal cap or other temporary material. Remove protection after concrete has been placed on both sides of joint.
- E. Contraction and Construction Joints
1. General: Construct contraction and construction joints true to line with face perpendicular to surface of concrete. If joints are not installed and constructed as indicated within the drawings and specified herein the Engineer shall instruct the Contractor to remove and dispose those areas identified as non-compliant. The Contractor shall repair, replace or install new concrete in those areas identified at no additional cost to the owner.
  2. Contraction Joints: Provide contraction joints, sectioning concrete into areas as shown on drawings to a depth equal to at least 1/3 concrete thickness in fresh concrete by grooving top portion with a recommended cutting tool and finishing edges with a joiner.
  3. Construction Joints: Place construction joints at end of placements and at expansion joints.
- F. Concrete Placement:
1. Do not place concrete until sub-base and forms have been checked for line and grade. Moisten sub-base if required to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
  2. Work shall not be performed during rainy weather or when temperature is less than 40°F (4.4°C).
  3. Adjacent work shall be protected from stain and damage. Damaged and stained areas shall be replaced or repaired to equal their original conditions.

4. Existing concrete, earth, and other water-permeable material against which new concrete is to be placed shall be thoroughly damp when concrete is placed. There shall be no free water on surface.
  5. Concrete which has set or partially set, before placing shall not be used. Retempering of concrete will not be permitted.
  6. Place concrete by methods that prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocation of reinforcing, dowels, and joint devices.
  7. Deposit and spread concrete in a continuous operation between transverse joints as far as possible. If interrupted for more than hour, place a construction joint.
  8. Do not place concrete on a soft, muddy or frozen base course. Do not permit workmen to walk in the concrete with boots or shoes covered with earth or other foreign substances.
  9. Place lower layer of concrete followed promptly by the welded wire fabric and then place the upper layer of concrete. Remove any portions of the bottom layer of concrete which have been placed more than fifteen (15) minutes without being covered with top layer and replace with freshly mixed concrete.
  10. Consolidate concrete thoroughly by tamping, spading and vibrating to eliminate honeycombing and voids. Space carefully to avoid dislocation of reinforcing materials, dowels and joints installing devices.
  11. When joining fresh concrete to concrete which has attained full set, latter shall be cleaned of foreign matter, and mortar laitance shall be removed by chipping and washing. Clean, roughened base surface shall be saturated with water, but shall have no free water on surface. A coat of 1:1 cement-sand grout, approximately 1/8 inch thick, shall be well scrubbed into the thoroughly dampened concrete base. New concrete shall be placed immediately, before grout has dried or set.
  12. Hot-Weather Placement: Comply with ACI 301 and as follows:
    - a. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
    - b. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.
- G. Finishing:
1. After striking-off and consolidating concrete, smooth surface by screeding and floating. Use hand methods only where mechanical floating is not possible. Adjust floating to produce uniform texture.
  2. After floating, test surface for trueness with a ten (10) foot straightedge. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide a continuous smooth finish.
  3. Work edges of slabs and formed joints with an edging tool, and round to one half-inch radius or as indicated within the drawings.
  4. Eliminate tool marks on concrete surface.

5. After completion of floating and when excess moisture or surface sheen has disappeared, complete trowelling and finish surface by drawing a broom across concrete surface perpendicular to line of traffic. On inclined slab surfaces, provide a coarse, non-slip finish by scoring surface with a stiff-bristled broom, perpendicular to line of traffic.
6. Do not remove forms for twenty-four (24) hours after concrete has been placed. After form removal, clean ends of joints and joint-up any minor honeycombed areas. Remove and replace areas of sections with major defects, as directed by the Engineer.

H. Curing:

1. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
2. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
3. Formed Surfaces: Cure formed concrete surfaces, including supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
4. Unformed Surfaces: Begin curing unformed surfaces including approach slabs and other surfaces immediately after finishing concrete.
5. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
  - a. Moisture Curing: Keep surfaces continuously moist for not less than seven days with water, continuous water-fog spray, or an absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
  - b. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

I. Repairs and Protection:

1. Repair or replace broken or defective concrete, as directed by the Engineer.
2. Drill test cores where directed by the Engineer when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with Portland Cement concrete bonded to pavement with epoxy adhesive.
3. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least fourteen (14) days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
4. Sweep concrete pavement and wash free of stains, discoloration, dirt, and other foreign material one (1) week prior to substantial completion.

**3.03 GRANITE CURB INSTALLATION**

- A. The foundation for the curb shall consist of concrete spread upon the subgrade and after being thoroughly compacted by tamping shall be 6-inches in depth.

- B. 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.
  - 1. The joints of curb and edging shall be filled with mortar for the full depth and width of the curb, and neatly pointed on the top and front exposed portions. After pointing, the curb and edging shall be cleaned of all excess mortar.
  - 2. The ends of the stone curb at driveways and intersections shall be cut at a bevel or rounded, as shown on the Drawings.
  - 3. Wheelchair ramps shall be constructed with transition sections, as shown on the Drawings.
- C. Immediately after curb is set and jointed, the trench shall be backfilled with concrete and approved material and compacted.
- D. Procedures for removal and resetting of existing granite curb, and new granite curb, in existing pavements shall include the following:
  - 1. Prior to excavation for existing granite curb removal, the pavement surface shall be cut a minimum of one foot from the face of curb with appropriate pavement cutting equipment.
  - 2. Existing curb shall be carefully excavated, and removed in a manner that protects the curb and existing pavement to remain from damage.
  - 3. Existing granite curb shall be cleaned by sandblasting as required to remove of bituminous material, paint and concrete from exposed surfaces prior to resetting in the proposed work.
  - 4. New granite curb shall be set to match the top of existing granite curb remaining in place at abutting sections and, if required, transitioned to the typical section shown on Drawings within the first section of curb.

END OF SECTION



**SECTION 02610**  
**WATER SUPPLY SYSTEM**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This Section specifies requirements for the replacement of existing hydrants, piping, valves, and fittings, and includes appurtenances and services, such as temporary bypassing.
- B. The work includes:
  - 1. Furnishing and installing a temporary water bypass system during the hydrant replacements along Plum Island Turnpike until the permanent system has been installed, tested, and approved.
  - 2. Furnishing and installing temporary water bypass systems to approximately eight (8) individual buildings.
  - 3. Removal and disposal of existing hydrants, pipe, valves, and other related components.
  - 4. Furnishing and installation of new hydrants, pipes, valves and valve boxes, pipe fittings, anchors, and other required accessories and connections to existing water systems.
  - 5. Disinfections and testing of the systems.

**1.02 ABBREVIATIONS**

- A. UNS            Unified Numbering System
- ASTM           American Society for Testing and Materials
- ANSI            American National Standards Institute
- AWWA           American Water Works Association

**1.03 COORDINATION**

- A. The Contractor shall coordinate with the Water Division of the Department of Public Services (DPS) prior to performing any work. Notices shall be provided by DPS and the Contractor shall deliver them to all impacted properties informing them that their water system will be momentarily interrupted during the project. Also refer to Specification Section 01010 Summary of Work.
- B. Locations of existing utilities shown on the plan have been developed from existing utility records and/or above ground inspection of the site. Completeness or accuracy of locations or depth of underground utility or structures cannot be guaranteed. Contractor must verify the location and depth of all underground utilities or structures prior to the start of work
  - 1. Call Dig-Safe at 1-888-344-7233 seventy-two (72) hours prior to excavation and construction. Record locations on Project Record Documents from Dig-Safe field location markings.
  - 2. Notify affected utility companies in advance and obtain written approval prior to commencing this Work. Coordinate and pay all applicable fees for disconnecting, removing, capping, and plugging utility services.

#### 1.04 SUBMITTALS

A. Material Testing:

1. The Contractor shall make available to the City all the bolts, tie rods, and nuts required for the project so representative samples can be retrieved by the City for testing. The Contractor shall allow for a 2-week (14 calendar days) turnaround for test results. The City will follow ASTM testing standards for the percent of the lot to be sampled and the tensile test and chemical analysis to be performed. For a project of this size, it is assumed that a total of six (6) for each type of bolt, tie rod, and nut will be retrieved for testing. These samples will be destroyed during the process.
2. The materials shall all be manufactured from the same 'lot' and mixed lots will not be allowed, unless otherwise approved by the City.
3. The City will employ Massachusetts Materials Research, Inc., of West Boylston, MA, to perform materials testing.
4. No materials shall be installed until the samples have been tested and proven to meet the specifications provided in the Contract Documents. It is the Contractor's responsibility to supply materials that meet specification and any delay (including liquidated damages) caused by non-compliant materials shall be the responsibility of the Contractor.

B. Pre-Construction Photographs:

1. Submit multiple digital photographs of the area around each hydrant being replaced including the area within a 20-foot radius of each hydrant. Provide additional photographs for those properties where walkways, walls, and fences are being removed and replaced, depicting enough detail to show the current physical condition of said items.
2. Photographs shall be taken the day prior to any work being performed at that location, or as otherwise allowed by the City.

C. Shop Drawings:

1. Submit shop drawings or descriptive literature, or both, showing dimensions, joints and other details of all materials to be furnished. Shop Drawings shall be submitted to the City for approval prior to ordering materials.
2. Submit certifications for stainless steel products that they meet the applicable material designation (i.e. SS316, UNS S31600, UNS S31603).

D. Torque Calculations:

1. Submit product data on the material being used to prevent galling and seizing of stainless steel bolts along with torque calculations showing the torque limits required for the torque on the fastener to achieve the desired torque required by the piping or pipe restraint or valve or fitting manufacturer.

E. Temporary Bypass System Along the Turnpike:

1. The proposed bypass system must meet the requirements of Part 3 of this Specification Section.
2. Submit for review and approval the following:
  - a. The proposed bypass piping layout and connection details – graphically or in narrative format – providing connections, bypass pipe diameter and lengths, and means of protecting the piping to allow vehicles to drive over it.

- b. The procedure and number of days to perform each bypass and the total length of time needed to complete the hydrant replacements on the Turnpike. Include time for chlorination, bacteria testing, setup, reassemble, etc.
- c. Provide the number of days for which the drawbridge will be shut down. The Contractor must submit bypassing details and specific dates for replacing these hydrants next to the bridge (bypass pipe size and weight of water inside the piping on the bridge, hydrants being removed, hydrants being used for the bypass, etc.) at least forty (40) days prior to shutting down the drawbridge. The City will forward this information to MassDOT and will coordinate the shutdown of the drawbridge. MassDOT requires at least a 30-day advanced notice.

F. As-Built Drawings:

- 1. Submit 1 hard copy and digital file(s) (AutoCAD drawing or PDF) of As-Built Drawings upon completion and acceptance of work.
- 2. As-Built Drawings shall be complete and shall indicate the true measurements and locations, horizontal and vertical, of all new construction. As-Built Drawings shall include a minimum of three ties to each hydrant, gate valve, and piping from fixed permanent objects.
- 3. As an alternative, the Contractor can submit GPS-obtained coordinates using equipment that provides an accuracy of 6"± using NAD83 datum and submit datalayers in ArcGIS format.

**1.05 DELIVERY, STORAGE AND HANDLING**

- A. Storage of pipe, fittings, valves and other water line appurtenances on the site shall be in accordance with the manufacturer's recommendations, subject to the approval of the City. Limited space is available for staging and storage next to the Plum Island Sewer Vacuum Pump Station on Olga Way. The space is uncovered and unprotected from the elements. The Contractor shall contact DPS prior to using the space. The Contractor shall hold the City of Newburyport and the Town of Newbury harmless for any damage or loss that may occur during the use of this property.
- B. Care shall be taken in loading, transporting and unloading to prevent injury to the pipe, fittings, valves and other water line appurtenances. Pipe or fittings shall not be dropped. All pipe or fittings shall be examined before lying and no piece shall be installed which is found to be defective. Any damage to pipe and fitting coatings shall be repaired as directed by the City.
- C. Pipe, fittings, valves and other water system appurtenances which are defective from any cause, including damage caused by handling, and determined by the City as unrepairable, shall be unacceptable for installation and shall be replaced at no cost to the City.
- D. Pipe and all water system appurtenances that are damaged or disturbed through any cause prior to acceptance of the work shall be repaired, realigned or replaced as required by the City at no additional cost to the City.

## **PART 2 - PRODUCTS**

### **2.01 GENERAL**

- A. The drawings are diagrammatic only and are intended to indicate the extent, but not all details, of the system, which shall be constructed. All materials are not shown; but the Contractor shall furnish and install all materials required for the complete system.
- B. Unless noted otherwise, all nuts and bolts shall be Stainless Steel Type 316. All stainless steel nuts and bolts shall be treated with an anti-galling, anti-seizing lubricant or coating – factory-applied or field-applied – to prevent seizing and/or fastening failure.

### **2.02 ZINC-COATED DUCTILE IRON PIPE AND SPOOL PIECES**

- A. Ductile iron pipe and spool pieces shall be designed in accordance with ANSI A21.50/AWWA C150 and manufactured in accordance with ANSI A21.51/AWWA C151.
- B. Ductile iron pipe and spool pieces shall be Pressure Class 52 furnished in 18-foot or 20-foot nominal lengths and spool pieces cut to required length.
- C. Unless noted otherwise, restrained joint assemblies for mechanical fittings shall be GripRing™ Pipe Restrainer by Romac® Industries, or approved equal.
- D. Pipe and spool pieces shall be cement-mortar lined in accordance with ANSI A21.4/AWWA C104, except that the cement lining shall be double thickness. The interior of all pipes shall have a seal coat of asphaltic material applied over the cement lining in accordance with ANSI A21.4/AWWA C104.
- E. The exterior of all pipe and spool pieces shall be factory coated, with a layer of arc-sprayed zinc per ISO 8179 at a rate of 200 g/m<sup>2</sup>. A finishing layer asphaltic topcoat shall be applied to the zinc. The coating system shall conform to latest edition of ISO 8179-1 “Ductile iron pipes – External zinc-based coating – Part 1: Metallic zinc with finishing layer”.

### **2.03 FITTINGS**

- A. All ductile iron pipe fittings shall conform to ANSI/AWWA C110/A21.10 gray and ductile iron standard fittings or ANSI/AWWA C153/A21.53-84 ductile iron compact fittings 3-inch through 16 inch and 350 psi working pressure.
- B. All fittings shall be epoxy coated meeting ANSI/AWWA C116/A21.16 and C550 standards – *Protective Fusion-Bonded Epoxy Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron fittings for water supply service.*
- C. All bolts and nuts shall be stainless steel Type 316 (UNS S31600 or UNS S31603).
- D. Restraining mechanical joint fittings shall be achieved by installing the GripRing™ pipe restraint as manufactured by Romac® Industries, or approved equal. Set screw-type restraint systems are not allowed.

### **2.04 DUCTILE IRON PIPE JOINTS**

- A. Joints shall be mechanical joints conforming to ANSI A21.11/AWWA C111 and shall be provided with required gaskets, lubricants and accessories.
- B. Restraining mechanical joints shall be achieved by installing the GripRing™ pipe restraint as manufactured by Romac Industries, or approved equal. Set screw-type restraint systems are not allowed.

- C. All bolts and nuts shall be stainless steel Type 316 (UNS S31600 or UNS S31603).

## 2.05 PIPE COUPLINGS

- A. Couplings and accessories shall be pressure rated up to 350 psi. Couplings shall be Alpha™ Wide Range Restrained Coupling by Romac® Industries, or approved equal, suitable for attaching to both PVC and ductile iron pipes.
- B. All cast components, including grippers, shall be ductile iron meeting ASTM A536, grade 65-45-12. Grippers shall be machine sharpened and heat treated and coated with Xylan® 1424 or approved equal.
- C. All bolts and nuts shall be stainless steel Type 316 (UNS S31600 or UNS S31603).
- D. Center ring casting shall be epoxy coated (interior and exterior) meeting ANSI/AWWA C116/A21.16 and C550 standards – *Protective Fusion-Bonded Epoxy Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron fittings for water supply service.*

## 2.06 ADAPTORS

- A. Adaptors shall be Foster Adaptor as manufactured by Infact Corporation, or approved equal.
- B. Adaptors shall be capable of connecting mechanical joint (MJ) valves to fittings without the need for pipe sections and shall meet the ductile iron and working pressure specifications of ANSI/AWWA C153/A21.53 AND C110/A21.10.
- C. Adaptor casting shall be epoxy coated meeting ANSI/AWWA C116/A21.16 and C550 standards – *Protective Fusion-Bonded Epoxy Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron fittings for water supply service.*
- D. All bolts shall be stainless steel Type 316 (UNS S31600 or UNS S31603).

## 2.07 TIE ROD RESTRAINT

- A. Tie rods and nuts shall be a minimum of ¾ inch diameter and made of stainless steel Type 316 (UNS S31600 or UNS S31603).

## 2.08 RESTRAINED JOINT GATE VALVES (RGV)

- A. 4" through 12" valves shall be Series 2500 resilient wedge gate valves with ALPHA™ restraint joints as manufactured by American Flow Control, or approved equal, and shall meet ANSI/AWWA C515, latest revision for water supply service.
- B. Gate valves shall be ductile iron, epoxy coated in conformance with AWWA C550, working pressure 250 psi, with triple O-ring seals, ductile iron wedges encapsulated with EPDM rubber and provided with polymer wedge guide covers, stainless steel Type 316 nuts and bolts (UNS S31600 or UNS S31603), and anti-rotation seats to prevent t-bolts from turning.
- C. Valves shall **OPEN RIGHT** using a 2-inch operating nut with an arrow cast in the metal.
- D. All valves shall have a gate box aligning device installed over and around the operating nut to prevent gate boxes from shifting off alignment over the nut. These devices shall be made of high strength plastic or similar non-corroding (not metal) material.

## 2.09 STANDARD GATE VALVES (GV)

- A. Gate valves shall be ductile iron, epoxy coated in conformance with AWWA C550, with O-ring seals, urethane coated wedge, stainless steel Type 316 nuts and bolts (UNS S31600 or UNS S31603), and anti-rotation seats to prevent t-bolts from turning.
- B. Valves shall **OPEN RIGHT** using a 2-inch operating nut with an arrow cast in the metal.

## 2.10 VALVE BOXES

- A. Each gate valve shall be provided with a valve box and cover.
- B. Valve boxes shall be of the buffalo-style, adjustable, telescoping (not screw type), free draining, heavy-pattern type designed and constructed to prevent the direct transmission of traffic loads to the pipe or valve.
- C. Valve boxes shall be cast iron, asphalt coated with cast iron covers. The smallest inside diameter of the shaft shall not be less than 5-1/4 inches. The lower section of the box shall be designed to enclose the operating nut and stuffing box of the valve. Provisions shall be made for adjustment through at least 6-inches vertically while retainage lap of at least 4 inches between sections.
- D. Covers shall be close fitting and substantially dirt-tight. The top of the cover shall be flush with the top of the box rim. The word "WATER" shall be cast in the top surface of the cover.

## 2.11 HYDRANTS

- A. Hydrants shall be City of Newburyport's Standard Hydrant: 5 ¼ Waterous Pacer Model WB67-250 with ALPHA™ Bases as manufactured by American Flow Control. Equals will not be approved.
- B. Hydrants shall have a 16-inch barrel with 4.5-feet to 6-feet burial depth and **open right** with two 2 ½ inch hose nozzles and one pumper nozzle.
- C. All below grade hardware shall be stainless steel Type 316 (UNS S31600 or UNS S31603).

## 2.12 TAPE COATING

- A. Tape coating shall be #1 Wax-Tape® as manufactured by Trenton®, or approved equal.
- B. Tape coating shall be a composite of wax and synthetic fiber fabric and shall be compatible with steel, ductile iron, and PVC materials, suitable for below-grade use to prevent corrosion of metallic materials. It must be able to form around bolts and other hardware and into crevices and irregular surfaces. It must remain flexible and provide exceptional waterproofing and must be made of inert materials that will not deteriorate. Thickness shall be 70-90 mils suitable to temperatures ranging from -50°-120°F.
- C. Primer shall be Wax-Tape® Primer as manufactured by Trenton®, or approved equal, designed with corrosion inhibitors and made to displace moisture and ensure adhesion of the tape.

## 2.13 POLYETHYLENE ENCASUREMENT

- A. Polyethylene encasement for ductile iron pipe shall be V-Bio™ Enhanced Polyethylene Encasement, patented by Ductile Iron Pipe Research Association (DIPRA), or approved equal.

- B. Polyethylene encasement shall consist of a three-layer system of co-extruded linear low-density polyethylene (LLDPE) film fused into one and infused with an anti-microbial biocide and a volatile corrosion inhibitor to control galvanic corrosion.
- C. Shall meet ANSI/AWWA C105/A21.5 standard for polyethylene encasement.

### **PART 3 - EXECUTION**

#### **3.01 GENERAL**

- A. The Contract Documents include Record (as-built) Plans for the construction of the water and sewer systems on Plum Island, dated 2004. The Contractor shall use these Plans to determine the locations of existing water mains and shall reproduce the as-built location(s) in the field for review and approval by the City prior to performing any excavations.
- B. All water pipes, fittings, valves, hydrants and other appurtenances shall be installed at the locations as shown on the Drawings.
- C. All work shall be coordinated with the DPS Water Division prior to performing the work.
- D. Only DPS personnel shall operate existing gate valves. The Contractor shall plan their work schedule accordingly.
- E. The Contractor should schedule and perform their work appropriately taking into account the ocean tide schedule to minimize working in low-lying areas during high tide. Additional costs associated with tides or high groundwater conditions due to the Contractor's negligence or lack of planning will not be borne by the City.
- F. Each hydrant shall be set vertically and be properly braced. All hydrants shall be installed with a minimum of two (2) means of restraint.

#### **3.02 FIRE SAFETY**

- A. The Contractor is forewarned of the critical nature of this Hydrant Replacement Project and the need to coordinate with the City of Newburyport and Town of Newbury Fire Departments on a regular basis. **At no time shall the water supply be shut down without the Fire Departments being notified beforehand.**

#### **3.03 TEMPORARY BYPASS SYSTEM ALONG TURNPIKE**

- A. The Contractor shall furnish, install, chlorinate, test, and maintain a bypass system during the hydrant replacements along the Turnpike.
- B. A bypass is only needed while replacing the hydrants along the Turnpike because the Island is not looped back to the mainland via another water main. The main water supply to Plum Island is via a 12-inch main that runs in the Plum Island Turnpike from Ocean Avenue in Newbury to the Island. There is only one feed to the Island.
- C. **Bypassing shall only be performed between 8am and 4pm, Monday through Friday, unless otherwise approved by the City. The 12-inch water main supplying the Island must be reactivated by 4pm each day.**
- D. **The bypass can only be performed in the spring between April 15 and June 15 or in the fall between September 15 and November 15.** Bypassing will not be allowed during the summer months when the Island's water demand and the risk of fire are greatest.

- E. In order to provide acceptable flow rates to the Island during the time at which the bypass is operational, the City performed hydraulic calculations for various bypass scenarios. These calculations provide the minimum pipe diameters and the maximum pipe lengths to use during the bypass in order to achieve acceptable flow rates. The results of the hydrant flow tests and calculations are included in Appendix A of this Specification.
- F. Except as noted below in Subparagraph 3.03.G., the bypass must comply with the following conditions:
1. Bypasses can be hydrant-to-hydrant, using the 5¼" nozzles on the hydrants.
  2. Minimum bypass pipe diameter shall be 6-inch.
  3. Bypass piping can be solid or flexible providing it's capable of maintaining shape without the possibility of being kinked or reduced in size (diameter), especially at the hydrant connections.
  4. More than one (1) hydrant can be replaced during any one bypass setup, providing the bypass piping lengths do not exceed the following maximum lengths (based on pipe diameter):
    - i. 6-inch diameter bypass: 1,650 feet
    - ii. 8-inch diameter bypass: 4,150 feet
  5. **IMPORTANT:** In the event of a fire, the Contractor must be able to shut down the bypass and reactivate the 12-inch main within one (1) hour of being notified.
  6. Bypass piping can be installed on the drawbridge in order to replace the hydrants immediately adjacent to the bridge. The drawbridge will need to remain closed during this time. The Contractor must submit bypassing details and specific dates for replacing these hydrants next to the bridge (bypass pipe size and weight of water inside the piping on the bridge, hydrants being removed, hydrants being used for the bypass, etc.) at least forty (40) days prior to shutting down the drawbridge. The City will forward this information to MassDOT for approval. MassDOT requires at least a 30-day advanced notice and they will contact the Coast Guard. Laying pipe on the bridge is strictly prohibited until the City has given the Contractor permission to proceed.
- G. The Contractor may propose a bypass option that does not comply with Subparagraph 3.03.F. above but must submit to the City for review and approval their proposed option. The Contractor must perform their own hydraulic calculations to ensure that similar flow rates can be achieved with this proposed bypass option.
- H. The Contractor shall bury the piping in a trench with an asphalt patch or road plates across the Plum Island Turnpike where and as necessary. Ramping over the bypass piping is only allowed at driveways.
- I. The Contractor must staff appropriately in order to minimize the down time and the need of said bypass(es).
- J. The Contractor shall submit their proposed bypass system with sufficient details and anticipated flow rates to the City for review and approval prior to performing the work. Refer to Part 1 of this Specification Section.

### 3.04 TEMPORARY WATER SUPPLY

- A. In general, water service to properties along the Turnpike and on the Island will need to be temporarily shut down for a number of hours during the day in order to perform the Work.



However, the Contractor shall provide a continuous water supply to the following properties, or as otherwise directed by the City:

- a. Plum Island Grille Restaurant, 2 Sunset Blvd
  - b. Mad Martha's Café, 51 Northern Blvd
  - c. Plum Island Beachcoma
  - d. Plum Island Provisions
  - e. Shellfish Purification Plant, 84 82<sup>nd</sup> Street
  - f. Surfand Bait and Tackle
2. The temporary water supply shall be connected on one end to a backflow device attached to a hydrant in another Zone and the other end connect to the building's outside spigot or by removing the water meter within the building and making the connection thereto. The temporary supply shall be activated prior to shutting down the Zone where the property is located.
  3. The Contractor is responsible for disinfecting and maintaining a safe water supply system. The Contractor shall flush the internal piping within the buildings, where and as necessary.
  4. The hose or piping shall be protected from damage by vehicles or otherwise and the Contractor shall follow the shutdown requirements as stated in Specification Section 01010 Summary of Work.

### 3.05 TORQUE ON STAINLESS STEEL FASTENERS

- A. **It is essential that all stainless steel bolts be tightened properly in order to prevent thread galling, seizing, or fastening failure. The contractor shall tighten all stainless steel fasteners (nuts and bolts) in strict accordance with the manufacturer's written instructions based on the anti-galling, anti-seizing product being used.** The Contractor shall employ whatever measure necessary to prevent galling (which often goes undetected), seizing, and/or failure, such as, but not limited to, lubricating the threads, furnishing nuts with a factory-applied coating, furnishing quality materials to ensure threads are fabricated smooth, furnishing nuts of a different stainless steel grade than the bolts, lowering the wrench speed to reduce heat generation, and tightening to the proper torque. Torque wrenches shall be used to tighten all bolts. It is the Contractor's responsibility to ensure that all the bolted connections are secure and will meet the pressures being imposed on them.
- B. The Contractor shall achieve the required torque value on the torque wrench as appropriate for the anti-seizing, anti-galling product manufacturer for the fastener being used. According to the Industrial Fasteners Institute, the torque necessary to develop a certain preload on a lubricated or factory-applied anti-galling fastener can be as much 50% less than that necessary for a dry fastener. The actual reduction amount will be based on the methodology and anti-galling, anti-seizing products being used.
- C. **The Contractor shall not install any fasteners until the torque calculations submitted to the City for review have been approved. Refer to Submittals subsection of this Specification.**

### 3.06 LAYING DUCTILE IRON PIPE AND FITTINGS

- A. Ductile iron pipe and fittings shall be installed in accordance with the requirements of ANSI/AWWA C600.

- B. Each length of pipe shall be laid with firm, full and even bearing throughout its entire length, in a trench prepared and maintained in accordance with Section 02200. The type of materials to be used in bedding and backfilling and method of placement shall conform to the requirements of Section 02200.
- C. All pipes shall be clean before lying. When lying is stopped for any reason, the open ends of the pipe shall be closed by watertight plugs or other approved means. If water is in the trench when work is resumed, the plug shall not be removed until the trench has been dewatered and all danger of water entering the pipe has been eliminated.
- D. Fittings, in addition to those shown on the Drawings, shall be provided if required to avoid utility conflicts.
- E. When cutting of pipe is required, the cutting shall be done by machine, leaving a smooth cut at right angles to the axis of the pipe. Cut ends of pipe to be used with a push-on bell shall be beveled to conform to the manufactured spigot end. Cement lining shall be undamaged.
- F. Maximum allowable deflection for pipe laid without fittings shall not exceed the allowable amount established by the pipe manufacturer and shall not exceed those shown in AWWA C600.
- G. The pipe shall be laid with a minimum cover of five (5) feet below finished grade.

### 3.07 JOINTING MECHANICAL JOINT PIPE AND FITTINGS

- A. Mechanical joints shall be made in strict accordance with the manufacturer's instructions. Mechanical joints shall be made by first cleaning the surfaces against which the gaskets will come in contact with a wire brush. The gasket, bell, and spigot shall be lubricated by washing with soapy water just prior to assembling the joint. After the nuts have been made up finger tight, the bottom nut, then top and then diametrically opposite nuts shall be progressively tightened. **Stainless steel bolts shall be tightened to the torques as recommended by the manufacturer, adjusted for lubrication, if necessary.**
- B. Under no conditions shall extension wrenches or a pipe over the handle of an ordinary ratchet wrench be used to secure greater leverage. After installation, all bolts and nuts shall be tape-wrapped for corrosion protection.

### 3.08 GATE VALVES AND BOXES

- A. Valves shall be set in firmly compacted and shaped soil. Where the soil in the trench subgrade is found to be soft, loose, freshly filled earth, unstable or unsuitable as a base, the unsuitable material shall be excavated to such additional depth and width as required. The excavated area shall be backfilled with gravel or crushed stone, compacted and shaped.
- B. Valve boxes shall be set centered and plumb over the operating nuts of all valves. The top of each valve box shall be set to finished grade with at least 10 inches of overlap remaining between the upper sections for vertical adjustment. Minimum overlap for lower, extension pieces shall be 4 inches.
- C. Boxes shall be adequately supported during backfilling to maintain vertical alignment.

**3.09 PRESSURE TESTING**

- A. Hydrostatic and leakage test shall be conducted in accordance with AWWA Standard C600, and as directed by the City. Testing shall be conducted by a certified independent water testing company.
- B. Conduct pipe tests after concrete thrust blocks have cured to the required 3000-psi strength. Fill pipe 24 hours prior to testing, and apply test pressure to stabilize system. Use only potable water.
- C. Prior to pressure testing, the entire pipe section shall be flushed to remove any rocks or debris, which may have inadvertently entered the pipe during construction.
- D. Once the pipe section has been filled at normal pressure and all entrapped air removed, the Contractor shall raise the pressure to 150 psi or two times the operating pressure (whichever is greater) by a special pressure pump, taking water from a small tank of proper dimensions for satisfactorily measuring the rate of pumpage into the pipe. This pressure shall be maintained for a minimum of 2 hours, during which time the line shall be checked for leaks. Measured rate of water leakage shall not exceed the allowable leakage listed below.
- E. Allowable leakage in gallons per hour, per 1,000 feet of exterior pipeline:

Test Pressure	Nominal Pipe Diameter [inches]					
	4	6	8	10	12	16
150 psi	0.36	0.55	0.74	0.92	1.10	1.47

- F. Interior piping in vaults, buildings, etc. shall have zero leakage.
- G. Should leakage exceed this rate, the Contractor shall immediately locate the leak or leaks and repair them. Pipe will be accepted only when leakage is zero, or less than the allowable amount. Approval does not absolve the Contractor from responsibility if leaks develop later within the period of warranty.

**3.10 DISINFECTION**

- A. Before being placed in service, all new water pipe shall be chlorinated in accordance with ANSI/AWWA C651 Standard for Disinfecting Water Mains.
- B. The location of the chlorination and sampling points will be determined by the City in the field. Taps for chlorination and sampling shall be installed by the Contractor. The Contractor shall uncover and backfill the taps as required.
- C. The pipe section being disinfected shall be flushed to remove discolored water and sediment from the pipe. A 25-mg/l chlorine solution in approved dosages shall be inserted through a tap at one end while water is being withdrawn at the other end of the pipe section. The chlorine concentration in the water in the pipe shall be maintained at a minimum 25 mg/l available chlorine during filling. To assure that this concentration is maintained, the chlorine residual shall be measured at regular intervals in accordance with procedures described in Standard Methods and AWWA M12, Simplified Procedure for Water Examination [Section K].
- D. During the application of the chlorine, valves shall be manipulated to prevent the treatment dosage from flowing back into the pipe supplying the water. Chlorine application shall not cease until the entire pipe section is filled with chlorine solution. The chlorinated water shall be retained in the pipe for at least a twenty-four hour period. The treated water shall contain a chlorine residual throughout the length of the pipe section as indicated in AWWA C651.

- E. Following the chlorination period, all treated water shall be flushed from the pipe section and replaced with water from the distribution system. Prior to disposal of treated water the Contractor shall check with local authorities to determine if the discharge will cause damage to the receiving body or sewer and, if required, the Contractor shall neutralize the chlorinated water in accordance with Appendix B, AWWA C650. Bacteriological sampling and analysis of the replacement water may then be made by the Contractor in full accordance with AWWA Specification C651. A minimum of three samples shall be taken by the Contractor at locations directed by the City along the length of water pipe being chlorinated and sent to a State approved private laboratory for analyses. The Contractor shall re-chlorine if the samples show presence of coliform, and the pipe section shall not be placed in service until all of the repeat samples show no presence of coliform.
- F. Furnish two copies of a Certificate of Disinfection Report to the City.
- G. The Contractor shall pay all costs for all testing, flushing, chlorinating; laboratory analyses, sampling, water supply and municipal charges.

**APPENDIX A**

1. Hydrant Flow Test Results
2. Approximate Flow Rates for Various Bypassing Options Along Turnpike

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**HYDRANT FLOW TEST REPORT**

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

ADDRESS : PLUM ISLAND TURNPIKE FLOW TESTING (VARIOUS LOCATIONS)

DATE : 3.24.17 TIME : 10:00 A.M. - 11:00 A.M.

GAUGED HYDRANT LOCATION : TEST 1 : P.I. TURNPIKE @ MASS. AUDUBON BLDG.

TEST 2 : P.I. TURNPIKE EAST OF P.I. BRIDGE

FLOW HYDRANT LOCATION : TEST 1 : (SAME)

TEST 2 : (SAME)

STATIC : \* p.s.i.

RESIDUAL : \* p.s.i.

PITOT : \* p.s.i.

GALLONS FLOWING \* g.p.m.

HYDRANT COEFFICIENT .9 SIZE/TYPE OF STREET MAIN : 12" PLASTIC

DIAMETER OF TIP / DEVICE : 2 1/2" DIFFUSER NO. OF OPENINGS : 1

ELEVATION CHANGE FROM GAUGED

HYDRANT TO BUILDING FIRST FLOOR : ELEVATIONS EQUAL

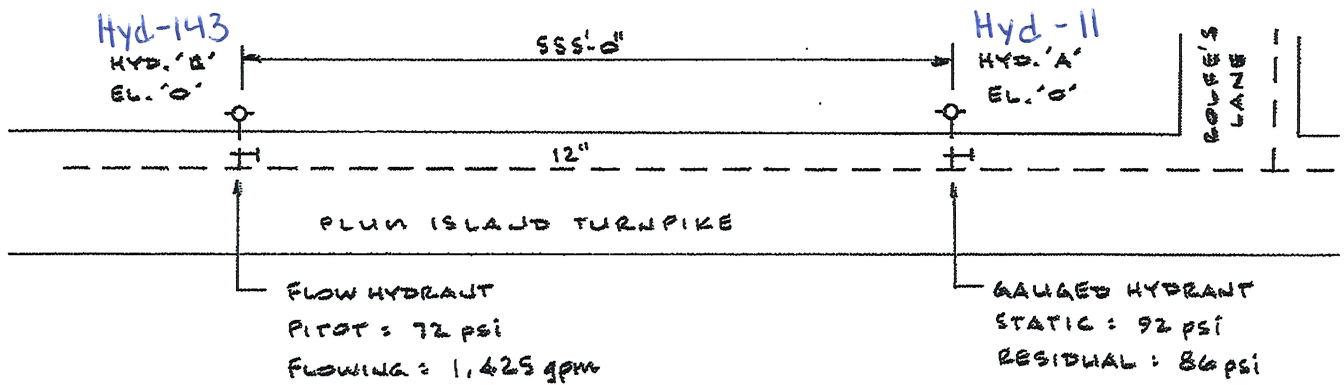
DISTANCE FROM STREET MAIN TO BUILDING : N/A

TEST PERFORMED BY : TOM HANSON (EBACHER CO.) & ERIC NOCK (NEPT. D.P.S.)

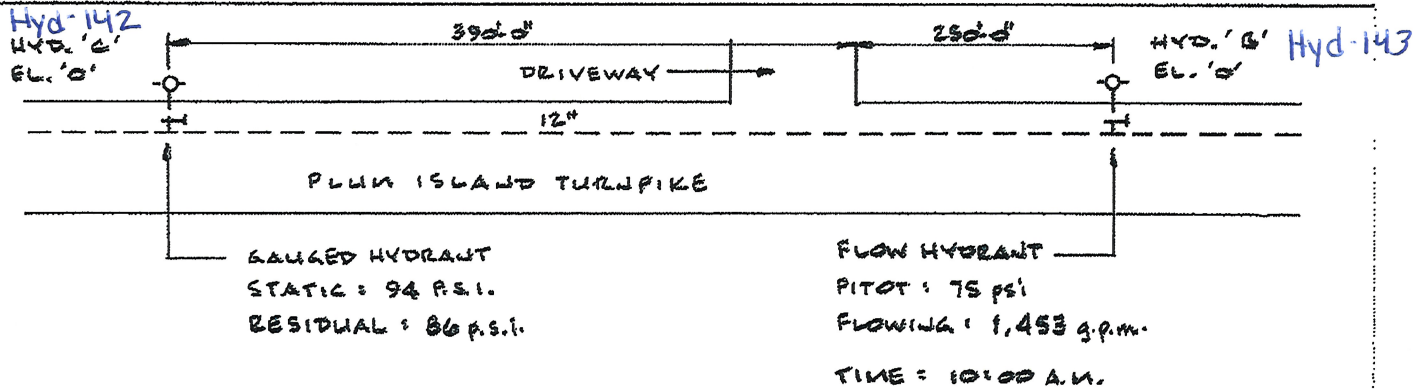
TEST WITNESSED BY : DAN ZATCLIFFE & MILES RIESE (NEPT. D.P.S.)

NOTES & SKETCH : (SEE ATTACHED SKETCH)

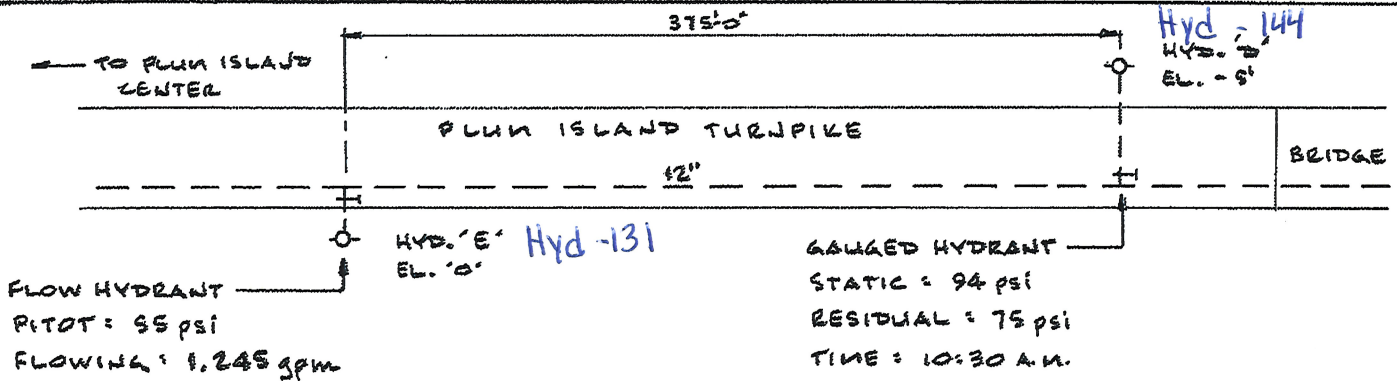
\* SEE ATTACHED SKETCH FOR TEST RESULTS



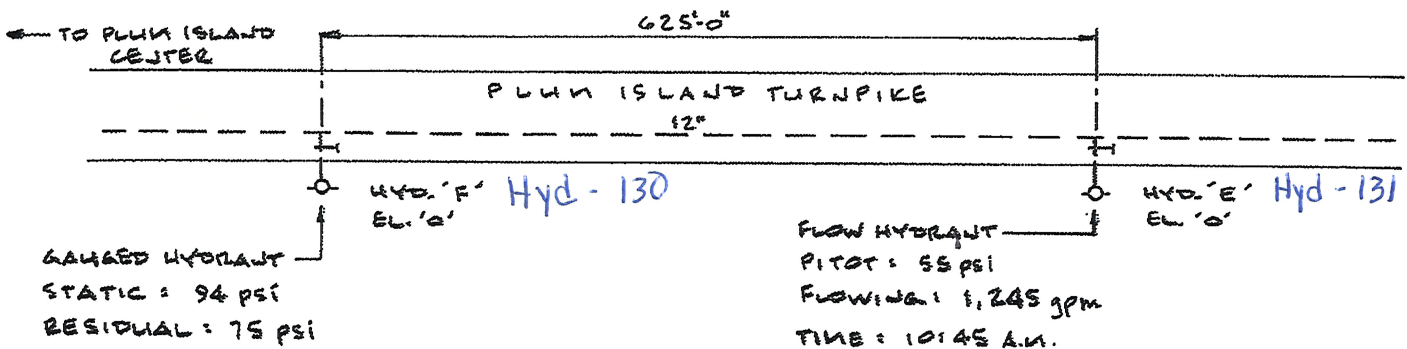
TEST # 1 : LOCATION - ACROSS FROM MASS. AUDUBON CENTER TIME = 9:45 & 11:00



TEST # 2 : LOCATION - ADJACENT TO DRIVEWAY, PARKER RIVER VISITOR'S CENTER



TEST # 3 : LOCATION - PLUM ISLAND TURNPIKE, EAST OF DRAW-BRIDGE

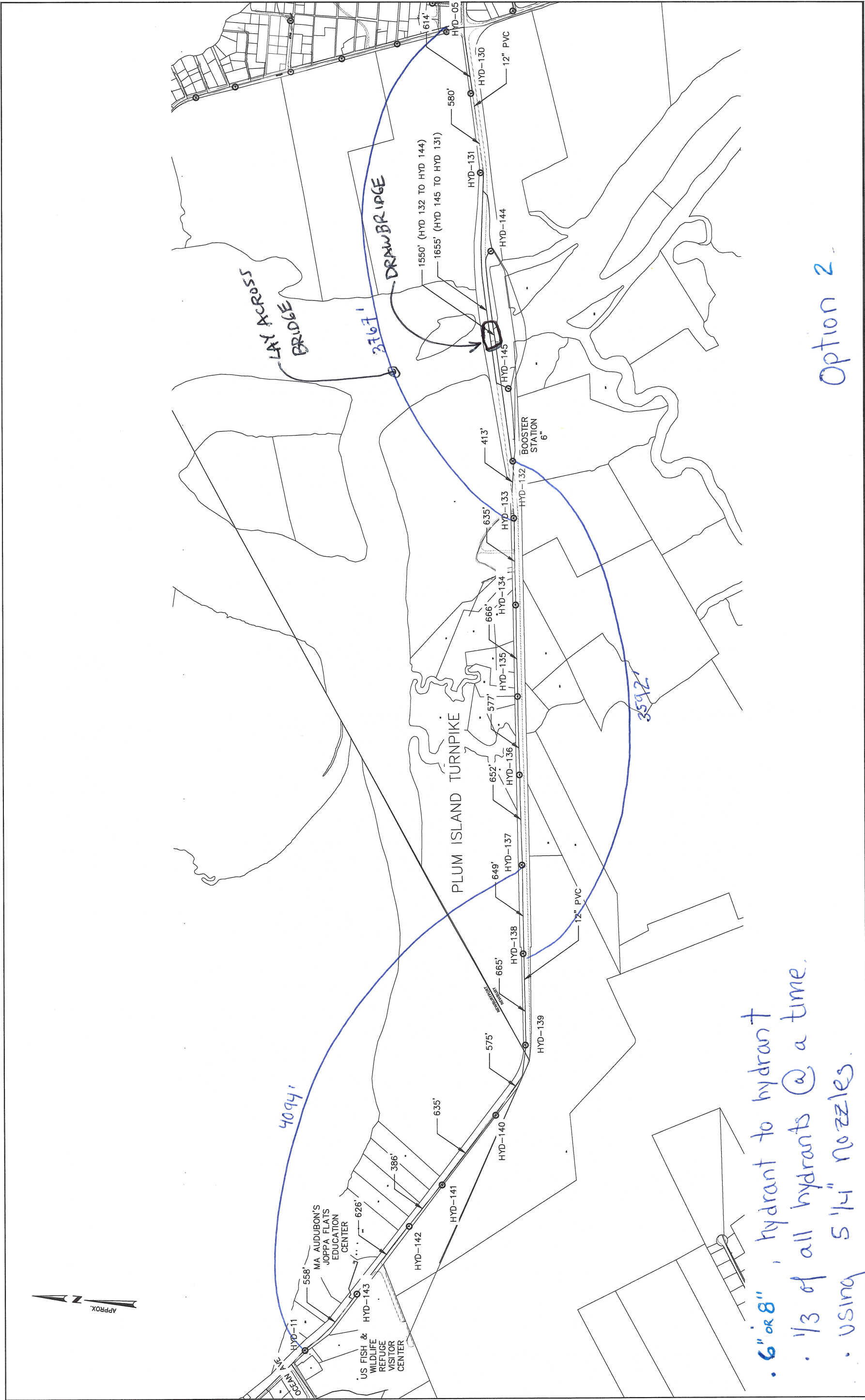


TEST # 4 : LOCATION - PLUM ISLAND TURNPIKE, EAST OF DRAW-BRIDGE




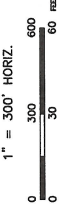
PLUM ISLAND HYDRANT REPLACEMENT PROJECT															
APPROXIMATE FLOW RATES FOR VARIOUS BYPASSING OPTIONS ALONG TURNPIKE															
24-Apr-17															
				Bypass Pipe		Existing Pipe		Flow, gpm	Velocity	Friction Loss			Bypass Connection Head loss. Note 1	20psi Flow Rate @ Hydrant at PI Blvd and Olga Way	
OPTION 1: BYPASS ALL HYDRANTS (2 miles)				D1, in	L1, ft	D2, in	L2, ft	Q, gpm	V1, ft/s	V2, ft/s	H1, ft	H2, ft	Hh	Q20	
	Option 1A: 6-inch			6	10,839	12	0	202.95	2.371	0.602	54.266	0.000	1.006	287.91	
	Option 1B: 8-inch			8	10,839	12	0	407.47	2.766	1.209	52.340	0.000	2.932	578.03	
OPTION 2: BYPASS 1/3 OF ALL HYDRANTS (longest 1/3 section)				D1, in	L1, ft	D2, in	L2, ft	Q, gpm	V1, ft/s	V2, ft/s	H1, ft	H2, ft	Hh	Q20	
	Option 2A: 6-inch			6	4,100	12	6,739	327.46	3.825	0.972	49.781	2.872	2.619	464.53	
	Option 2B: 8-inch			8	4,100	12	6,739	597.50	4.056	1.773	40.223	8.745	6.304	847.59	
OPTION 3: BYPASS 1 HYDRANT (longest bypass length Hyd 145 to Hyd 131)															
	Option 3A: 6-inch														
		Bypass Hyd 1	Bypass Hyd 2	Bypassed Hydrant	D1, in	L1, ft	D2, in	L2, ft	Q, gpm	V1, ft/s	V2, ft/s	H1, ft	H2, ft	Hh	Q20
		11	142	143	6	1,184	12	9,655	547.78	6.398	1.625	37.275	10.667	7.329	777.06
		143	141	142	6	1,012	12	9,827	577.59	6.747	1.714	35.146	11.977	8.149	819.36
		142	140	141	6	1,021	12	9,818	575.92	6.727	1.709	35.268	11.902	8.102	816.98
		141	139	140	6	1,210	12	9,629	543.64	6.350	1.613	37.563	10.490	7.219	771.19
		140	138	139	6	1,240	12	9,599	538.98	6.295	1.599	37.884	10.292	7.096	764.58
		139	137	138	6	1,314	12	9,525	527.93	6.166	1.566	38.635	9.829	6.808	748.91
		138	136	137	6	1,301	12	9,538	529.83	6.189	1.572	38.508	9.908	6.857	751.60
		137	135	136	6	1,229	12	9,610	540.67	6.315	1.604	37.767	10.364	7.141	766.98
		136	134	135	6	1,243	12	9,596	538.51	6.290	1.598	37.916	10.273	7.084	763.92
		135	133	134	6	1,301	12	9,538	529.83	6.189	1.572	38.508	9.908	6.857	751.60
		134	132	133	6	1,048	12	9,791	570.98	6.669	1.694	35.627	11.681	7.963	809.97
		133	145	132	6	940	12	9,899	591.51	6.909	1.755	34.117	12.609	8.546	839.10
		132	144	145	6	1,577	12	9,262	493.33	5.762	1.464	40.898	8.430	5.945	699.82
		145	131	144	6	1,633	12	9,206	486.76	5.686	1.444	41.311	8.173	5.787	690.50
		144	130	131	6	1,163	12	9,676	551.19	6.438	1.635	37.037	10.814	7.421	781.90
		131	5	130	6	1,194	12	9,645	546.18	6.380	1.621	37.387	10.599	7.287	774.79
	Option 3B: 8-inch														
		Bypass Hyd 1	Bypass Hyd 2	Bypassed Hydrant	D1, in	L1, ft	D2, in	L2, ft	Q, gpm	V1, ft/s	V2, ft/s	H1, ft	H2, ft	Hh	Q20
		11	142	143	8	1,184	12	9,655	820.05	5.566	2.433	20.878	22.520	11.874	1,163.30
		143	141	142	8	1,012	12	9,827	841.55	5.712	2.497	18.721	24.046	12.505	1,193.80
		142	140	141	8	1,021	12	9,818	840.38	5.704	2.493	18.839	23.963	12.470	1,192.15
		141	139	140	8	1,210	12	9,629	816.93	5.545	2.424	21.186	22.302	11.784	1,158.88
		140	138	139	8	1,240	12	9,599	813.38	5.521	2.413	21.537	22.053	11.682	1,153.84
		139	137	138	8	1,314	12	9,525	804.79	5.463	2.388	22.378	21.457	11.436	1,141.66
		138	136	137	8	1,301	12	9,538	806.28	5.473	2.392	22.233	21.560	11.479	1,143.77
		137	135	136	8	1,229	12	9,610	814.68	5.530	2.417	21.409	22.144	11.719	1,155.68
		136	134	135	8	1,243	12	9,596	813.03	5.519	2.412	21.572	22.029	11.672	1,153.34
		135	133	134	8	1,301	12	9,538	806.28	5.473	2.392	22.233	21.560	11.479	1,143.77
		134	132	133	8	1,048	12	9,791	836.92	5.681	2.483	19.190	23.715	12.368	1,187.23
		133	145	132	8	940	12	9,899	851.03	5.777	2.525	17.753	24.730	12.788	1,207.25
		132	144	145	8	1,577	12	9,262	776.23	5.269	2.303	25.119	19.514	10.639	1,101.14
		145	131	144	8	1,633	12	9,206	770.51	5.230	2.286	25.657	19.132	10.483	1,093.02
		144	130	131	8	1,163	12	9,676	822.59	5.583	2.441	20.625	22.699	11.948	1,166.91
		131	5	130	8	1,194	12	9,645	818.85	5.558	2.430	20.997	22.436	11.839	1,161.60

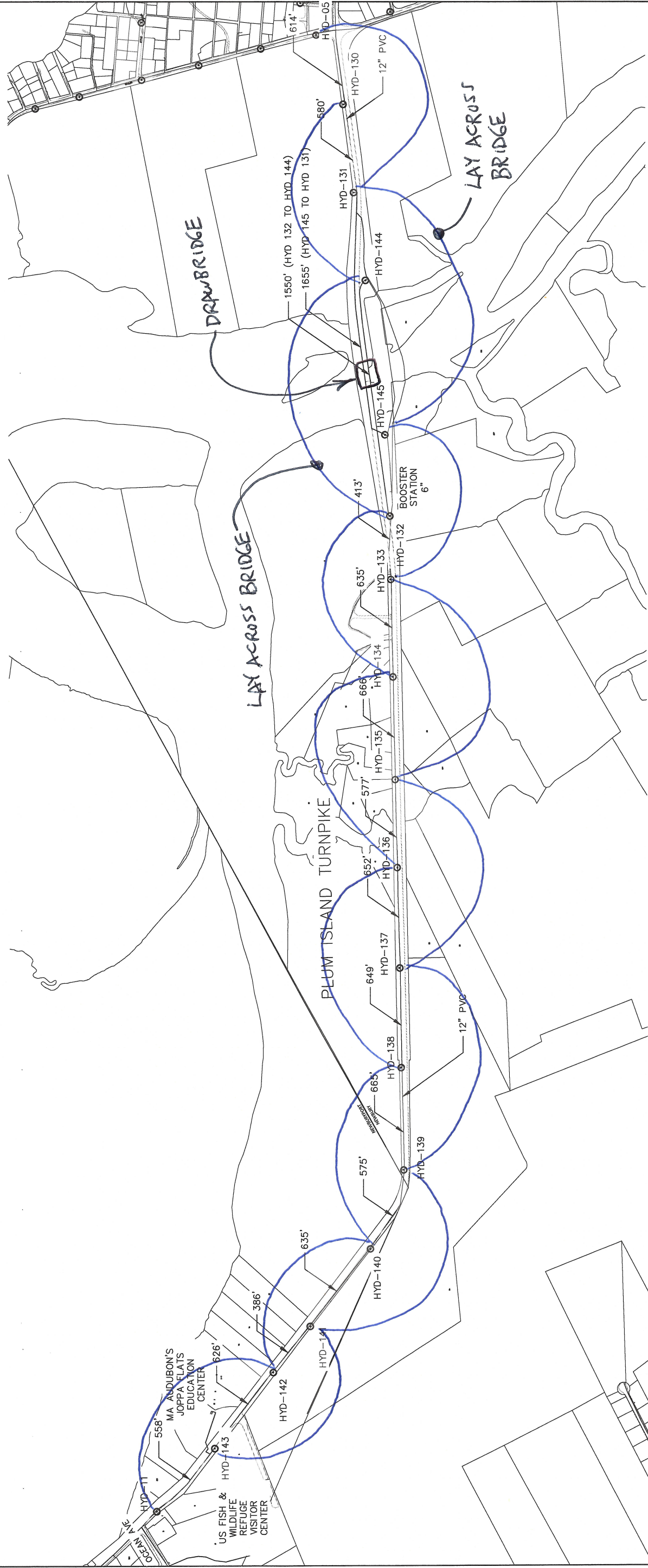
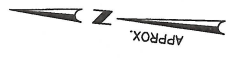
Note 1. Hh includes loss in hydrant branch for discharge through 2.5-inch nozzle plus two hydrant branches and connection through 5.25-inch nozzles



- 6" or 8" , hydrant to hydrant
- 1/3 of all hydrants @ a time.
- using 5 1/4" nozzles.

Option 2

 <p style="font-size: small;">CITY OF NEWBURYPORT DEPARTMENT OF PUBLIC SERVICES 16A PERRY WAY NEWBURYPORT, MA 01950</p>	Designed By: D. GIGNON	Checked By: J.E. WHITE	Date: APRIL 7, 2017	Sheet No. 1 OF 1										
	<p><b>PLUM ISLAND HYDRANT REPLACEMENT</b></p> <p><b>TEMPORARY BY-PASS</b></p>													
SCALE: 1" = 300' HORIZ. 		Revisions												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Rev No</th> <th style="width: 10%;">Date</th> <th style="width: 10%;">Drawn</th> <th style="width: 10%;">Chkd</th> <th style="width: 50%;">Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Rev No	Date	Drawn	Chkd	Description						Description			
Rev No	Date	Drawn	Chkd	Description										



- 6" or 8" hydrant to hydrant
- one (1) hydrant @ a time.
- using 5 1/4" nozzles

Option 3.



CITY OF NEWBURYPORT  
DEPARTMENT OF PUBLIC SERVICES  
16A PERRY WAY  
NEWBURYPORT, MA 01950

Rev No	Date	Drawn	Chkd	Description	Revisions

Designed By: D. GLEASON  
Checked By: J.E. WHITE  
Date: APRIL 7, 2017

SCALE:  
1" = 300' HORIZ.  
0 300 600  
0 30 60 MET

PLUM ISLAND HYDRANT REPLACEMENT  
TEMPORARY BY-PASS

Sheet No.  
1 OF 1

**SECTION 02800**  
**PLANTING AND SEEDING**

**PART 1 - GENERAL**

**1.01 DESCRIPTION**

- A. This Section specifies requirements for amending topsoil, providing and amending loam borrow, seeding for site landscape areas as well as the requirements for the provision and installation of groundcover plants, and associated fertilizing, backfill soil mix, maintenance, clean-up, and guarantee.
- B. The work includes:
  - 1. Furnishing, amending, spreading, and fine grading loam borrow
  - 2. Seeding
  - 3. Beach Grass planting.

**1.02 SUBMITTALS**

- A. Submit a complete list of all materials proposed for use in this work, demonstrating complete conformance with the requirements specified. Approval shall not constitute final acceptance. The Owner reserves the right to reject, on or after delivery, any material that does not meet specifications.
- B. Submit seed mixtures for approval. Manufacturers Product Data
  - 1. Submit material specifications and installation instructions where applicable attesting that the following materials meet the requirements specified:
    - a. Fertilizer
    - b. Seeds
    - c. Beach grass

**1.03 QUALITY ASSURANCE**

- A. Conduct all planting operations by experienced personnel under competent supervision. Education, experience and/or certification or license by appropriate organization may be reviewed to evaluate competence.

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver material to the site in original unopened packages, showing weight, manufacturer's name and guaranteed analysis.
- B. Store materials in a manner that their effectiveness and usability will not be diminished or destroyed. Materials shall be uniform in composition, dry, unfrozen and free flowing. Any material which has become caked or otherwise damaged or does not meet specified requirements will be rejected.
- C. Deliver plant materials to site in healthy and undamaged condition. Plants shall either be shipped in enclosed trucks or all surfaces to be wrapped to prevent damage and desiccation.

- D. Culms (single beach grass plant with stem) shall be moist upon arrival and shall be kept moist until installation. Wet burlap may be used to do so.
- E. All plants on-site shall meet the requirements specified herein. Any plant material on site which does not meet the criteria specified shall be replaced with approved plants at the Contractor's expense. Prior approval of plants at the source shall not alter the right of inspection or rejection at the site or during the progress of the work.

**1.05 PROJECT CONDITIONS**

- A. The Contractor shall be solely responsible for judging the full extent of work requirements involved. All areas to be seeded shall be inspected by the Contractor before starting work and any defects, such as incorrect grading, etc., shall be reported to the City prior to beginning this work. The commencement of work by the Contractor shall indicate his acceptance of the areas to be planted, and he shall assume full responsibility for the work of this Section.

**1.06 GUARANTEE**

- A. The contractor shall warranty groundcover for a period of one (1) year after date of issuance of the "Substantial Completion", against defects including dead and unsatisfactory growth, except for defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond Landscape Installer's control.
- B. Replace plant materials found dead or not in a healthy growing condition. Plants shall exhibit healthy foliage, and be free of insect or disease damage. Replace plants during normal planting season.

**PART 2 - PRODUCTS**

**2.01 SOILS**

Provide a minimum depth of four (4) inches of planting soil in all areas indicated for seeding.

- A. The Contractor shall provide ¼-inch screened loam borrow, which shall be a "loam", "sandy loam" or "fine sandy loam" as determined by mechanical analysis and based on the "USDA Textural Classification". It shall conform to the following mechanical analysis:

<u>Textural Class</u>	<u>% of Total Weight</u>	<u>Average %</u>
Sand (.05-2.0mm dia. range)	45 to 75	60
Silt (.002-.05mm dia. range)	15 to 35	25
Clay (>0.002mm dia. range)	5 to 25	15

- B. Loam borrow shall consist of natural topsoil, free from subsoil, obtained from an area that has never been stripped. The location of the source of loam shall be submitted for approval. It shall be removed to a depth of one (1) foot or less if subsoil is encountered. Planting soil shall be of uniform quality screened free of hard clods, stiff clay, hardpan, sods, partially disintegrated stone, lime, cement, ashes, slag, concrete, tar residues, tarred paper, boards, chips, glass, sticks, or any other undesirable material. The loam borrow must not be handled or moved when in a wet or frozen condition.

## **2.02 WATER**

- A. Water shall be furnished by the Contractor, suitable for irrigation, and free from ingredients harmful to plant life. Hoses and other watering equipment required for the work shall be furnished by the Contractor.

## **2.03 SEED**

- A. Lawn Seed: Seed species shall be improved varieties, "named" species, and shall be provided to the City for review and approval. Seed shall be fresh, clean and selected from the previous year's crop; weed seed content not to exceed 1 percent; complying with applicable Federal and State seed laws; furnished and delivered premixed in unopened containers.

Seed shall be a Fine Fescue (such as chewings, hard, creeping red and sheep) mixed with native draught tolerant grasses.

- B. All seed shall comply with State and Federal seed laws. Submit manufacturers Certificate of Compliance. Seed, which has become wet, moldy or otherwise damaged, will not be acceptable.
- C. Seed may be mixed by an approved method on the site or may be mixed by a dealer. If the seed is mixed on site, each variety shall be delivered in the original containers, which shall bear the dealers guaranteed statement of the composition of the mixture.

## **2.04 PLANT MATERIAL – American Beach Grass (Cape Variety)**

- A. The Contractor shall furnish and plant beach grass as shown on the drawings. Plants shall conform to measurements and species as designated on the plan and details and standards as established in American Standard for Nursery Stock ANSI Z60.1-1996 or as most recently amended. Plant material shall be nursery grown and shall be shapely, well-grown, healthy, sound and free of disease, insect pests, eggs or larvae, and shall have a well developed root system. All plants shall be typical of their species or variety and shall have a normal habit of growth.

## **PART 3 - EXECUTION**

### **3.01 PLANTING DATES**

- A. Plant within the following dates:
  - 1. American Beach Grass: October 15 – March 31
  - 2. Seeding: Spring: April 1 – June 1 or Fall: August 15 – October 15
  - 3. Planting shall be prohibited in frozen or muddy ground.
- B. Special conditions may warrant a variance in the above dates. Contractor shall notify the City of the conditions and the proposed variance. Permission will be given if the variance is warranted.

### **3.02 PREPARATION OF PLANTING SOIL**

- A. Landscape Contractor shall be responsible for the amending and spreading of loam borrow.
- B. Maintain at all times during the planting operations one or more stockpiles of approved planting soil.

**3.03 SEED BED PREPARATION**

- A. Grade all lawn areas to finish grades as indicated on the Drawings. When no grades are shown, areas shall have a smooth and continual grade between existing or fixed controls and elevations shown on Drawings. Roll, scarify, and rake, as required, to obtain uniform, even lawn surfaces. All lawn areas shall slope to drain. Finish grades shall be approved by the City.
- B. Place loam to a minimum depth of 6 inches on previously scarified subsoil to a minimum depth of 6-inches. Subsoil shall be cleaned of debris and stones larger than 2-inches prior to topsoil spreading.
- C. Seeding shall be done immediately after final grading, provided the bed has remained in a good, friable condition, and has not become muddy or compacted. Any undulations or irregularities in the surface resulting from the addition of amendments tilling, or other causes, shall be regraded prior to seeding. The surface shall be free of stones, cleared of all trash, debris, roots, brush, wire, grade stakes and other objects that would interfere with establishment of grass and grass maintenance operations.

**3.04 SEEDING**

- A. All areas indicated on the plan shall be loamed and seeded only after written approval of the City of bed preparation. All disturbed areas outside the limit of seeding shall be seeded. Seeding shall be done between April 1 and June 1, or August 15 and October 15, except as otherwise authorized in writing by the City.

**3.05 MANUAL SEEDING**

- A. Mechanical and/or hand seeding operations shall be done in two directions at right angles to each other. Sow the seed with an approved seeding device at the specified rate. Seed shall be thoroughly and evenly watered with a fine spray to penetrate the soil to a depth of at least two (2) inches.

**3.06 PLANTING**

- A. Remove all wrappings so that the plants may be reviewed for damage or disease.
- B. Set plant plumb, turned to face best side of plant forward, parallel to the coastline, and brace firmly in position. Loosen surface soil of culm and comb out any exposed roots. Plants and roots must be kept moist before and during planting. Wet burlap may be used. Planting configuration is to be according to Plan Details. Compact the sand firmly around the plants.
- C. Water all plants immediately after planting. All plants shall be flooded with water twice within first 24-hours of planting.

**3.07 MAINTENANCE AND PROTECTION (SEEDING)**

- A. Maintenance shall begin immediately after an area is seeded or sodded and shall continue until final acceptance, but in no case, less than the following period.
  - 1. Sixty (60) days after substantial completion of seeding.
- B. Maintenance shall include reseeding, mowing, watering, weeding, edging, fertilizing, disease and insect pest control, repair of all erosion damage (including replacement of soil), and any

other procedures consistent with good horticultural practice, required to ensure normal, vigorous, and healthy growth.

C. Watering of Seeded Areas:

The seeded areas shall be maintained in a continuous moist condition, satisfactory for good germination and growth of grass until acceptance. The Contractor shall provide all labor and arrange for all watering necessary to establish an acceptable lawn. In the absence of an adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of at least four (4) inches. Watering shall be done in a manner which will provide uniform coverage, prevent erosion due to application of excessive quantities over small areas, and prevent damage to the finished surface by the watering equipment. The Contractor shall furnish sufficient watering equipment to apply one complete coverage to the seeded areas in an eight (8) hour period.

D. Protection

1. Protect new planting from foot/vehicular traffic by placing snow fencing around it.
2. Barriers must be raised immediately after seeding and shall be maintained until acceptance.

E. Reseeding: After the grass in seeded areas has appeared, all areas and parts of areas which, in the opinion of the City, fail to show a uniform stand of grass, for any reason whatsoever, shall be reseeded and such areas and parts of areas shall be seeded repeatedly until all areas are covered with a satisfactory growth of grass. Reseeding together with necessary grading, fertilizing, and trimming shall be done at the expense of the Contractor.

F. Mowing:

The Contractor shall keep seeded areas mowed until written acceptance of the seeding by the City by cutting to a height of two (2) inches when growth reaches three (3) inches or as directed by the City. Grass clippings shall be left on the lawn as fertilizer (nitrogen and organic matter)

G. Fertilizing:

1. Seed: An organic, slow-release, water-insoluble fertilizer
2. Planting: high nitrogen, low phosphorous, slow release fertilizer.
3. Fertilizer shall be applied in the spring within 30 days of planting (but not before April 1) and a second late in the late summer/early fall.

### 3.08 MAINTENANCE AND PROTECTION OF PLANTINGS

A. Maintenance shall begin immediately after each plant is planted and shall continue until final acceptance, but in no case less than ninety (90) days after substantial completion of planting. Maintenance shall include but not be limited to the following:

1. Maintenance of new planting shall consist of, watering, cultivating, weeding, and furnishing and applying such sprays as are necessary to keep the planting free of insects and disease.
2. Planting areas and plants shall be protected at all times against trespassing and damage of all kinds for the duration of the maintenance period.



3. All plantings shall be watered at least twice per week during maintenance period. At each watering the soil around each plant shall be thoroughly saturated. If sufficient moisture is retained in the soil, as determined by the City, the required watering may be reduced.
4. Watering shall be provided from April through November.

### **3.09 INSPECTION AND ACCEPTANCE**

#### **A. Conditions of Acceptance**

1. Acceptance shall be given for the entire portion of the lawn areas. No partial acceptance will be given. If the lawn material and workmanship are acceptable, written notice will be given by the City to the Contractor of a "Certificate of Acceptance".
2. Lawns shall exhibit a uniform, thick, well-developed stand of grass. Lawn areas shall have not bare spots in excess of four inches in diameter and bare spots shall comprise no more than two percent of the total area of that lawn. Lawn areas shall not exhibit signs of damage from erosion, washouts, gullies, or other causes.
3. If the lawn work is unacceptable the Contractor shall continue the maintenance of the lawn areas by over seeding, replacing erosion control materials, applying additional amendments as required, and other work as necessary to achieve an acceptable stand of grass as determined by the City. The maintenance period shall be extended as necessary for the completion of the work.
4. The Contractor's responsibility for maintenance of lawns or parts of lawns shall cease on receipt of the "Certificate of Acceptance".

#### **B. Site Cleanup:**

1. The Contractor shall leave the site in a clean and neat condition. Final acceptance will not be granted until this condition is met.
2. Remove erosion control measures after grass establishment period and repair the area covered with erosion control devices to match adjacent seeded area.

### **3.10 REJECTION AND REPLACEMENT**

- A. Promptly remove rejected plant material from site.
- B. Replace as soon as planting conditions permit all such rejected material with plants of same species and of the quality stated in Contract documents.

### **3.11 ONE-YEAR PLANT GUARANTEE AND INSPECTIONS**

- A. One year after the date of acceptance, the Contractor, at the request of the City, shall arrange for a meeting with the City to review the condition of the plantings. The City will provide a written report on the results of the inspection. The Contractor shall replace any dead or unhealthy grass or plants at this time.

END OF SECTION

**ATTACHMENT 2F**

**BID TABULATION FORM**

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**BID PRICE FORM**

Item #	Item With Unit Price Written in Words	Est. Qty.	Unit Price (in Figures)	Subtotal Amount (in Figures)
<b>HYDRANT ASSEMBLIES:</b>				
1A	Hydrant Assembly – Type 1, per each  At _____ dollars and _____ cents	115		
1B	Hydrant Assembly – Type 2 (6 inch main), per each  At _____ dollars and _____ cents	3		
1C	Hydrant Assembly – Type 2 (8 inch main), per each  At _____ dollars and _____ cents	6		
1D	Hydrant Assembly – Type 2 (12 inch main), per each  At _____ dollars and _____ cents	4		
1E	Hydrant Assembly – Type 3 (12 inch main), per each  At _____ dollars and _____ cents	17		
<b>GATE VALVES (GV)</b>				
2A	4 inch Standard Gate Valve (GV), per each  At _____ dollars and _____ cents	8		
2B	6 inch Standard Gate Valve (GV), per each  At _____ dollars and _____ cents	2		
2C	8 inch Standard Gate Valve (GV), per each  At _____ dollars and _____ cents	1		
2D	12 inch Standard Gate Valve (GV), per each  At _____ dollars and _____ cents	1		

Item #	Item With Unit Price Written in Words	Est. Qty.	Unit Price (in Figures)	Subtotal Amount (in Figures)
<b>RESTRAINED JOINT GATE VALVES (RGV)</b>				
3A	4 inch Restrained Joint Gate Valve (RGV), per each  At _____ dollars and _____ cents	43		
3B	6 inch Restrained Joint Gate Valve (RGV), per each  At _____ dollars and _____ cents	6		
3C	8 inch Restrained Joint Gate Valve (RGV), per each  At _____ dollars and _____ cents	12		
3D	12 inch Restrained Joint Gate Valve (RGV), per each  At _____ dollars and _____ cents	4		
<b>FITTINGS AND TEES</b>				
4A	4 inch Fitting, per each  At _____ dollars and _____ cents	6		
4B	6 inch Fitting, per each  At _____ dollars and _____ cents	4		
4C	8 inch Fitting, per each  At _____ dollars and _____ cents	4		
4D	12 inch Fitting, per each  At _____ dollars and _____ cents	6		
4E	8x8x4 Tee, per each  At _____ dollars and _____ cents	2		
4F	8x8x6 Tee, per each  At _____ dollars and _____ cents	2		

Item #	Item With Unit Price Written in Words	Est. Qty.	Unit Price (in Figures)	Subtotal Amount (in Figures)
4G	12x12x4 Tee, per each  At _____ dollars and _____ cents	7		
4H	12x12x6 Tee, per each  At _____ dollars and _____ cents	2		
4I	12x12x8 Tee, per each  At _____ dollars and _____ cents	2		
<b>TRANSITION COUPLINGS</b>				
5A	4 inch Transition Coupling, per each  At _____ dollars and _____ cents	48		
5B	6 inch Transition Coupling, per each  At _____ dollars and _____ cents	8		
5C	8 inch Transition Coupling, per each  At _____ dollars and _____ cents	14		
5D	12 inch Transition Coupling, per each  At _____ dollars and _____ cents	16		
<b>PIPING</b>				
6A	4 inch Ductile Iron Pipe, per linear foot  At _____ dollars and _____ cents	160		
6B	6 inch Ductile Iron Pipe, per linear foot  At _____ dollars and _____ cents	120		
6C	8 inch Ductile Iron Pipe, per linear foot  At _____ dollars and _____ cents	180		

Item #	Item With Unit Price Written in Words	Est. Qty.	Unit Price (in Figures)	Subtotal Amount (in Figures)
6D	12 inch Ductile Iron Pipe, per linear foot  At _____ dollars and _____ cents	160		
	<b>MISCELLANEOUS ITEMS</b>			
7	1 inch PE Water Service, per linear foot  At _____ dollars and _____ cents	30		
8	2 inch PE Water Service, per linear foot  At _____ dollars and _____ cents	60		
9	Test Pits, per cubic yard  At _____ dollars and _____ cents	300		
10	Unclassified Excavation, per cubic yard  At _____ dollars and _____ cents	200		
11	Temporary Water Bypass System Along Turnpike, per lump sum  At _____ dollars and _____ cents	1		
12	Temporary Water Supply System, per lump sum  At _____ dollars and _____ cents	1		
13	Hydrant Assembly Removal, per each  At _____ dollars and _____ cents	25		
14	Utility Pole Support, per each  At _____ dollars and _____ cents	20		
15	Gravel Borrow, per cubic yard  At _____ dollars and _____ cents	1,300		

Item #	Item With Unit Price Written in Words	Est. Qty.	Unit Price (in Figures)	Subtotal Amount (in Figures)
16	Crushed Stone for Driveways, per ton  At _____ dollars and _____ cents	10		
17	Temporary Pavement Patch, per square yard  At _____ dollars and _____ cents	1,870		
18	Permanent Pavement Repairs, per square yard  At _____ dollars and _____ cents	6,500		
19	Mailbox Removed and Reset, per each  At _____ dollars and _____ cents	20		
20	Block wall Removed & Reset, per linear foot  At _____ dollars and _____ cents	15		
21	Concrete Unit Pavers Removed and Reset, per square foot  At _____ dollars and _____ cents	60		
22	Paver/Cobble Edging Removed and Reset, per linear foot At _____ dollars and _____ cents	80		
23	Curbing Removed and Reset, per linear foot  At _____ dollars and _____ cents	40		
24	Post and Rail Fence Removed and Reset, per section  At _____ dollars and _____ cents	7		
25	Picket Fence Removed and Reset, per section  At _____ dollars and _____ cents	25		
26	Stockade Fence Removed and Reset, per section  At _____ dollars and _____ cents	9		



Item #	Item With Unit Price Written in Words	Est. Qty.	Unit Price (in Figures)	Subtotal Amount (in Figures)
27	Chain link Fence Removed and Reset, per section  At _____ dollars and _____ cents	7		
28	Timber Guardrail Removed and Reset, per section  At _____ dollars and _____ cents	4		
29	Wood Post Removed and Reset, per each  At _____ dollars and _____ cents	10		
30	Dune Grass, per square foot  At _____ dollars and _____ cents	2,200		
31	Tree Removed and Reset, per each  At _____ dollars and _____ cents	10		
32	Mobilization, per lump sum  At _____ dollars and _____ cents	1		
<b>TOTAL BID AMOUNT (sum of all subtotal figures)</b>				

The Bidder agrees to perform the Bid Work described in these Contract Documents for the following total contract price:

In words: \_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_  
Tax ID#

\_\_\_\_\_  
Authorized Individual Name (Printed)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**ATTACHMENT 3F**

PREVAILING WAGE RATE SHEETS

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

**Prevailing Wage Rates**

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

RONALD L. WALKER, II  
Secretary

WILLIAM D MCKINNEY  
Director

CHARLES D. BAKER  
Governor

KARYN E. POLITO  
Lt. Governor

**Awarding Authority:** City of Newburyport - DPS  
**Contract Number:** DPS-2017-009 **City/Town:** NEWBURYPORT  
**Description of Work:** Plum Island Hydrant Replacement Project - Replacing 145 fire hydrants and assemblies and installing 63 new isolation valves including bypass when needed.  
**Job Location:** Plum Island - Newburyport

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Construction</b>						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.15	\$10.91	\$10.89	\$0.00	\$53.95
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.22	\$10.91	\$10.89	\$0.00	\$54.02
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.34	\$10.91	\$10.89	\$0.00	\$54.14
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$88.29	\$9.80	\$19.23	\$0.00	\$117.32
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2016	\$32.65	\$7.60	\$13.00	\$0.00	\$53.25
	06/01/2017	\$33.65	\$7.60	\$13.00	\$0.00	\$54.25
	12/01/2017	\$34.28	\$7.60	\$13.00	\$0.00	\$54.88
	06/01/2018	\$35.12	\$7.60	\$13.00	\$0.00	\$55.72
	12/01/2018	\$35.96	\$7.60	\$13.00	\$0.00	\$56.56
	06/01/2019	\$36.83	\$7.60	\$13.00	\$0.00	\$57.43
	12/01/2019	\$37.69	\$7.60	\$13.00	\$0.00	\$58.29
For apprentice rates see "Apprentice- LABORER"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT &amp; FROST INSULATORS LOCAL 6 (BOSTON)</i>	12/01/2016	\$33.90	\$11.50	\$7.10	\$0.00	\$52.50
	06/01/2017	\$34.90	\$11.50	\$7.10	\$0.00	\$53.50
	12/01/2017	\$35.90	\$11.50	\$7.10	\$0.00	\$54.50
	06/01/2018	\$36.90	\$11.50	\$7.10	\$0.00	\$55.50
	12/01/2018	\$37.90	\$11.50	\$7.10	\$0.00	\$56.50
	06/01/2019	\$38.90	\$11.50	\$7.10	\$0.00	\$57.50
	12/01/2019	\$39.90	\$11.50	\$7.10	\$0.00	\$58.50
	06/01/2020	\$40.90	\$11.50	\$7.10	\$0.00	\$59.50
	12/01/2020	\$41.90	\$11.50	\$7.10	\$0.00	\$60.50
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	12/01/2016	\$32.15	\$7.60	\$13.00	\$0.00	\$52.75
	06/01/2017	\$33.15	\$7.60	\$13.00	\$0.00	\$53.75
	12/01/2017	\$33.78	\$7.60	\$13.00	\$0.00	\$54.38
	06/01/2018	\$34.62	\$7.60	\$13.00	\$0.00	\$55.22
	12/01/2018	\$35.46	\$7.60	\$13.00	\$0.00	\$56.06
	06/01/2019	\$36.33	\$7.60	\$13.00	\$0.00	\$56.93
	12/01/2019	\$37.19	\$7.60	\$13.00	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2016	\$45.38	\$10.00	\$15.25	\$0.00	\$70.63
	06/01/2017	\$46.38	\$10.00	\$15.25	\$0.00	\$71.63
	12/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2016	\$45.38	\$10.00	\$15.25	\$0.00	\$70.63
	06/01/2017	\$46.38	\$10.00	\$15.25	\$0.00	\$71.63
	12/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	12/01/2016	\$32.15	\$7.60	\$13.00	\$0.00	\$52.75
	06/01/2017	\$33.15	\$7.60	\$13.00	\$0.00	\$53.75
	12/01/2017	\$33.78	\$7.60	\$13.00	\$0.00	\$54.38
	06/01/2018	\$34.62	\$7.60	\$13.00	\$0.00	\$55.22
	12/01/2018	\$35.46	\$7.60	\$13.00	\$0.00	\$56.06
	06/01/2019	\$36.33	\$7.60	\$13.00	\$0.00	\$56.93
	12/01/2019	\$37.19	\$7.60	\$13.00	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	12/01/2016	\$32.65	\$7.60	\$13.00	\$0.00	\$53.25
	06/01/2017	\$33.65	\$7.60	\$13.00	\$0.00	\$54.25
	12/01/2017	\$34.28	\$7.60	\$13.00	\$0.00	\$54.88
	06/01/2018	\$35.12	\$7.60	\$13.00	\$0.00	\$55.72
	12/01/2018	\$35.96	\$7.60	\$13.00	\$0.00	\$56.56
	06/01/2019	\$36.83	\$7.60	\$13.00	\$0.00	\$57.43
	12/01/2019	\$37.69	\$7.60	\$13.00	\$0.00	\$58.29
For apprentice rates see "Apprentice- LABORER"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2017	\$42.92	\$6.97	\$16.21	\$0.00	\$66.10

**Apprentice - BOILERMAKER - Local 29**

**Effective Date - 01/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$27.90	\$6.97	\$10.54	\$0.00	\$45.41
2	65	\$27.90	\$6.97	\$10.54	\$0.00	\$45.41
3	70	\$30.04	\$6.97	\$11.35	\$0.00	\$48.36
4	75	\$32.19	\$6.97	\$12.16	\$0.00	\$51.32
5	80	\$34.34	\$6.97	\$12.97	\$0.00	\$54.28
6	85	\$36.48	\$6.97	\$13.78	\$0.00	\$57.23
7	90	\$38.63	\$6.97	\$14.59	\$0.00	\$60.19
8	95	\$40.77	\$6.97	\$15.40	\$0.00	\$63.14

**Notes:**

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

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (LYNN)</i>	03/01/2017	\$50.76	\$10.75	\$19.22	\$0.00	\$80.73
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**Classification**

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

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

**Effective Date - 03/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.38	\$10.75	\$19.22	\$0.00	\$55.35
2	60	\$30.46	\$10.75	\$19.22	\$0.00	\$60.43
3	70	\$35.53	\$10.75	\$19.22	\$0.00	\$65.50
4	80	\$40.61	\$10.75	\$19.22	\$0.00	\$70.58
5	90	\$45.68	\$10.75	\$19.22	\$0.00	\$75.65

**Notes:**

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

<b>BULLDOZER/GRADER/SCRAPER</b> <i>OPERATING ENGINEERS LOCAL 4</i>	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"

<b>CAISSON &amp; UNDERPINNING BOTTOM MAN</b> <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2016	\$37.45	\$7.60	\$14.35	\$0.00	\$59.40
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For apprentice rates see "Apprentice- LABORER"

<b>CAISSON &amp; UNDERPINNING LABORER</b> <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2016	\$36.30	\$7.60	\$14.35	\$0.00	\$58.25
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For apprentice rates see "Apprentice- LABORER"

<b>CAISSON &amp; UNDERPINNING TOP MAN</b> <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2016	\$36.30	\$7.60	\$14.35	\$0.00	\$58.25
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For apprentice rates see "Apprentice- LABORER"

<b>CARBIDE CORE DRILL OPERATOR</b> <i>LABORERS - ZONE 2</i>	12/01/2016	\$32.15	\$7.60	\$13.00	\$0.00	\$52.75
	06/01/2017	\$33.15	\$7.60	\$13.00	\$0.00	\$53.75
	12/01/2017	\$33.78	\$7.60	\$13.00	\$0.00	\$54.38
	06/01/2018	\$34.62	\$7.60	\$13.00	\$0.00	\$55.22
	12/01/2018	\$35.46	\$7.60	\$13.00	\$0.00	\$56.06
	06/01/2019	\$36.33	\$7.60	\$13.00	\$0.00	\$56.93
	12/01/2019	\$37.19	\$7.60	\$13.00	\$0.00	\$57.79

For apprentice rates see "Apprentice- LABORER"

<b>CARPENTER</b> <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	03/01/2017	\$38.77	\$9.90	\$17.00	\$0.00	\$65.67
	09/01/2017	\$39.78	\$9.90	\$17.00	\$0.00	\$66.68
	03/01/2018	\$40.78	\$9.90	\$17.00	\$0.00	\$67.68
	09/01/2018	\$41.82	\$9.90	\$17.00	\$0.00	\$68.72
	03/01/2019	\$42.85	\$9.90	\$17.00	\$0.00	\$69.75

**Classification**

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

**Apprentice - CARPENTER - Zone 2 Eastern MA**

**Effective Date - 03/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.39	\$9.90	\$1.63	\$0.00	\$30.92
2	60	\$23.26	\$9.90	\$1.63	\$0.00	\$34.79
3	70	\$27.14	\$9.90	\$12.11	\$0.00	\$49.15
4	75	\$29.08	\$9.90	\$12.11	\$0.00	\$51.09
5	80	\$31.02	\$9.90	\$13.74	\$0.00	\$54.66
6	80	\$31.02	\$9.90	\$13.74	\$0.00	\$54.66
7	90	\$34.89	\$9.90	\$15.37	\$0.00	\$60.16
8	90	\$34.89	\$9.90	\$15.37	\$0.00	\$60.16

**Effective Date - 09/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.89	\$9.90	\$1.63	\$0.00	\$31.42
2	60	\$23.87	\$9.90	\$1.63	\$0.00	\$35.40
3	70	\$27.85	\$9.90	\$12.11	\$0.00	\$49.86
4	75	\$29.84	\$9.90	\$12.11	\$0.00	\$51.85
5	80	\$31.82	\$9.90	\$13.74	\$0.00	\$55.46
6	80	\$31.82	\$9.90	\$13.74	\$0.00	\$55.46
7	90	\$35.80	\$9.90	\$15.37	\$0.00	\$61.07
8	90	\$35.80	\$9.90	\$15.37	\$0.00	\$61.07

**Notes:**

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

CEMENT MASONRY/PLASTERING	01/01/2017	\$45.67	\$12.20	\$19.41	\$1.30	\$78.58
BRICKLAYERS LOCAL 3 (LYNN)	07/01/2017	\$46.30	\$12.20	\$19.41	\$1.30	\$79.21
	01/01/2018	\$46.54	\$12.20	\$19.41	\$1.30	\$79.45
	07/01/2018	\$46.79	\$12.20	\$19.41	\$1.30	\$79.70
	01/01/2019	\$47.03	\$12.20	\$19.41	\$1.30	\$79.94
	07/01/2019	\$47.27	\$12.20	\$19.41	\$1.30	\$80.18
	01/01/2020	\$47.52	\$12.20	\$19.41	\$1.30	\$80.43



**Classification**

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

**Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (Lynn)**

**Effective Date - 01/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.84	\$12.20	\$12.41	\$0.00	\$47.45
2	60	\$27.40	\$12.20	\$14.41	\$1.30	\$55.31
3	65	\$29.69	\$12.20	\$15.41	\$1.30	\$58.60
4	70	\$31.97	\$12.20	\$16.41	\$1.30	\$61.88
5	75	\$34.25	\$12.20	\$17.41	\$1.30	\$65.16
6	80	\$36.54	\$12.20	\$18.41	\$1.30	\$68.45
7	90	\$41.10	\$12.20	\$19.41	\$1.30	\$74.01

**Effective Date - 07/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.15	\$12.20	\$12.41	\$0.00	\$47.76
2	60	\$27.78	\$12.20	\$14.41	\$1.30	\$55.69
3	65	\$30.10	\$12.20	\$15.41	\$1.30	\$59.01
4	70	\$32.41	\$12.20	\$16.41	\$1.30	\$62.32
5	75	\$34.73	\$12.20	\$17.41	\$1.30	\$65.64
6	80	\$37.04	\$12.20	\$18.41	\$1.30	\$68.95
7	90	\$41.67	\$12.20	\$19.41	\$1.30	\$74.58

**Notes:**

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

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

CHAIN SAW OPERATOR LABORERS - ZONE 2	12/01/2016	\$32.15	\$7.60	\$13.00	\$0.00	\$52.75
	06/01/2017	\$33.15	\$7.60	\$13.00	\$0.00	\$53.75
	12/01/2017	\$33.78	\$7.60	\$13.00	\$0.00	\$54.38
	06/01/2018	\$34.62	\$7.60	\$13.00	\$0.00	\$55.22
	12/01/2018	\$35.46	\$7.60	\$13.00	\$0.00	\$56.06
	06/01/2019	\$36.33	\$7.60	\$13.00	\$0.00	\$56.93
	12/01/2019	\$37.19	\$7.60	\$13.00	\$0.00	\$57.79

For apprentice rates see "Apprentice- LABORER"

CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES OPERATING ENGINEERS LOCAL 4	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

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

COMPRESSOR OPERATOR OPERATING ENGINEERS LOCAL 4	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

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

DELEADER (BRIDGE) PAINTERS LOCAL 35 - ZONE 2	01/01/2017	\$51.41	\$7.85	\$16.10	\$0.00	\$75.36
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**Classification**

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

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

**Effective Date - 01/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.71	\$7.85	\$0.00	\$0.00	\$33.56
2	55	\$28.28	\$7.85	\$3.66	\$0.00	\$39.79
3	60	\$30.85	\$7.85	\$3.99	\$0.00	\$42.69
4	65	\$33.42	\$7.85	\$4.32	\$0.00	\$45.59
5	70	\$35.99	\$7.85	\$14.11	\$0.00	\$57.95
6	75	\$38.56	\$7.85	\$14.44	\$0.00	\$60.85
7	80	\$41.13	\$7.85	\$14.77	\$0.00	\$63.75
8	90	\$46.27	\$7.85	\$15.44	\$0.00	\$69.56

**Notes:**

Steps are 750 hrs.

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

DEMO: ADZEMAN LABORERS - ZONE 2	12/01/2016	\$36.50	\$7.60	\$14.15	\$0.00	\$58.25
	06/01/2017	\$37.50	\$7.60	\$14.15	\$0.00	\$59.25
	12/01/2017	\$38.35	\$7.60	\$14.15	\$0.00	\$60.10
	06/01/2018	\$39.30	\$7.60	\$14.15	\$0.00	\$61.05
	12/01/2018	\$40.25	\$7.60	\$14.15	\$0.00	\$62.00
	06/01/2019	\$41.25	\$7.60	\$14.15	\$0.00	\$63.00
	12/01/2019	\$42.25	\$7.60	\$14.15	\$0.00	\$64.00

For apprentice rates see "Apprentice- LABORER"

DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 2	12/01/2016	\$37.50	\$7.60	\$14.15	\$0.00	\$59.25
	06/01/2017	\$38.50	\$7.60	\$14.15	\$0.00	\$60.25
	12/01/2017	\$39.35	\$7.60	\$14.15	\$0.00	\$61.10
	06/01/2018	\$40.30	\$7.60	\$14.15	\$0.00	\$62.05
	12/01/2018	\$41.25	\$7.60	\$14.15	\$0.00	\$63.00
	06/01/2019	\$42.25	\$7.60	\$14.15	\$0.00	\$64.00
	12/01/2019	\$43.25	\$7.60	\$14.15	\$0.00	\$65.00

For apprentice rates see "Apprentice- LABORER"

DEMO: BURNERS LABORERS - ZONE 2	12/01/2016	\$37.25	\$7.60	\$14.15	\$0.00	\$59.00
	06/01/2017	\$38.25	\$7.60	\$14.15	\$0.00	\$60.00
	12/01/2017	\$39.10	\$7.60	\$14.15	\$0.00	\$60.85
	06/01/2018	\$40.05	\$7.60	\$14.15	\$0.00	\$61.80
	12/01/2018	\$41.00	\$7.60	\$14.15	\$0.00	\$62.75
	06/01/2019	\$42.00	\$7.60	\$14.15	\$0.00	\$63.75
	12/01/2019	\$43.00	\$7.60	\$14.15	\$0.00	\$64.75

For apprentice rates see "Apprentice- LABORER"

<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 2</i>	12/01/2016	\$37.50	\$7.60	\$14.15	\$0.00	\$59.25
	06/01/2017	\$38.50	\$7.60	\$14.15	\$0.00	\$60.25
	12/01/2017	\$39.35	\$7.60	\$14.15	\$0.00	\$61.10
	06/01/2018	\$40.30	\$7.60	\$14.15	\$0.00	\$62.05
	12/01/2018	\$41.25	\$7.60	\$14.15	\$0.00	\$63.00
	06/01/2019	\$42.25	\$7.60	\$14.15	\$0.00	\$64.00
	12/01/2019	\$43.25	\$7.60	\$14.15	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2016	\$37.25	\$7.60	\$14.15	\$0.00	\$59.00
	06/01/2017	\$38.25	\$7.60	\$14.15	\$0.00	\$60.00
	12/01/2017	\$39.10	\$7.60	\$14.15	\$0.00	\$60.85
	06/01/2018	\$40.05	\$7.60	\$14.15	\$0.00	\$61.80
	12/01/2018	\$41.00	\$7.60	\$14.15	\$0.00	\$62.75
	06/01/2019	\$42.00	\$7.60	\$14.15	\$0.00	\$63.75
	12/01/2019	\$43.00	\$7.60	\$14.15	\$0.00	\$64.75
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 2</i>	12/01/2016	\$36.50	\$7.60	\$14.15	\$0.00	\$58.25
	06/01/2017	\$37.50	\$7.60	\$14.15	\$0.00	\$59.25
	12/01/2017	\$38.35	\$7.60	\$14.15	\$0.00	\$60.10
	06/01/2018	\$39.30	\$7.60	\$14.15	\$0.00	\$61.05
	12/01/2018	\$40.25	\$7.60	\$14.15	\$0.00	\$62.00
	06/01/2019	\$41.25	\$7.60	\$14.15	\$0.00	\$63.00
	12/01/2019	\$42.25	\$7.60	\$14.15	\$0.00	\$64.00
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	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"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$58.86	\$9.80	\$19.23	\$0.00	\$87.89
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$42.04	\$9.80	\$19.23	\$0.00	\$71.07
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$63.06	\$9.80	\$19.23	\$0.00	\$92.09
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$88.23	\$9.80	\$19.23	\$0.00	\$117.26
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) <i>ELECTRICIANS LOCAL 103</i>	03/01/2017	\$48.33	\$13.00	\$17.45	\$0.00	\$78.78
	09/01/2017	\$49.28	\$13.00	\$17.48	\$0.00	\$79.76
	03/01/2018	\$50.48	\$13.00	\$17.51	\$0.00	\$80.99
	09/01/2018	\$51.67	\$13.00	\$17.55	\$0.00	\$82.22
	03/01/2019	\$52.87	\$13.00	\$17.59	\$0.00	\$83.46
For apprentice rates see "Apprentice- ELECTRICIAN"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ELECTRICIAN ELECTRICIANS LOCAL 103	03/01/2017	\$48.33	\$13.00	\$17.45	\$0.00	\$78.78
	09/01/2017	\$49.28	\$13.00	\$17.48	\$0.00	\$79.76
	03/01/2018	\$50.48	\$13.00	\$17.51	\$0.00	\$80.99
	09/01/2018	\$51.67	\$13.00	\$17.55	\$0.00	\$82.22
	03/01/2019	\$52.87	\$13.00	\$17.59	\$0.00	\$83.46

**Apprentice - ELECTRICIAN - Local 103**

**Effective Date - 03/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$19.33	\$13.00	\$0.58	\$0.00	\$32.91
2	40	\$19.33	\$13.00	\$0.58	\$0.00	\$32.91
3	45	\$21.75	\$13.00	\$13.37	\$0.00	\$48.12
4	45	\$21.75	\$13.00	\$13.37	\$0.00	\$48.12
5	50	\$24.17	\$13.00	\$13.75	\$0.00	\$50.92
6	55	\$26.58	\$13.00	\$14.11	\$0.00	\$53.69
7	60	\$29.00	\$13.00	\$14.48	\$0.00	\$56.48
8	65	\$31.41	\$13.00	\$14.85	\$0.00	\$59.26
9	70	\$33.83	\$13.00	\$15.22	\$0.00	\$62.05
10	75	\$36.25	\$13.00	\$15.60	\$0.00	\$64.85

**Effective Date - 09/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$19.71	\$13.00	\$0.59	\$0.00	\$33.30
2	40	\$19.71	\$13.00	\$0.59	\$0.00	\$33.30
3	45	\$22.18	\$13.00	\$13.39	\$0.00	\$48.57
4	45	\$22.18	\$13.00	\$13.39	\$0.00	\$48.57
5	50	\$24.64	\$13.00	\$13.76	\$0.00	\$51.40
6	55	\$27.10	\$13.00	\$14.12	\$0.00	\$54.22
7	60	\$29.57	\$13.00	\$14.50	\$0.00	\$57.07
8	65	\$32.03	\$13.00	\$14.87	\$0.00	\$59.90
9	70	\$34.50	\$13.00	\$15.25	\$0.00	\$62.75
10	75	\$36.96	\$13.00	\$15.62	\$0.00	\$65.58

**Notes :**

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

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

ELEVATOR CONSTRUCTOR ELEVATOR CONSTRUCTORS LOCAL 4	01/01/2017	\$55.86	\$15.28	\$15.71	\$0.00	\$86.85
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**Classification**

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

**Apprentice - ELEVATOR CONSTRUCTOR - Local 4**

**Effective Date - 01/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.93	\$15.28	\$0.00	\$0.00	\$43.21
2	55	\$30.72	\$15.28	\$15.71	\$0.00	\$61.71
3	65	\$36.31	\$15.28	\$15.71	\$0.00	\$67.30
4	70	\$39.10	\$15.28	\$15.71	\$0.00	\$70.09
5	80	\$44.69	\$15.28	\$15.71	\$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 <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2017	\$39.10	\$15.28	\$15.71	\$0.00	\$70.09
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For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR <i>LABORERS - ZONE 2</i>	12/01/2016	\$32.15	\$7.60	\$13.00	\$0.00	\$52.75
	06/01/2017	\$33.15	\$7.60	\$13.00	\$0.00	\$53.75
	12/01/2017	\$33.78	\$7.60	\$13.00	\$0.00	\$54.38
	06/01/2018	\$34.62	\$7.60	\$13.00	\$0.00	\$55.22
	12/01/2018	\$35.46	\$7.60	\$13.00	\$0.00	\$56.06
	06/01/2019	\$36.33	\$7.60	\$13.00	\$0.00	\$56.93
	12/01/2019	\$37.19	\$7.60	\$13.00	\$0.00	\$57.79

For apprentice rates see "Apprentice- LABORER"

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2016	\$41.37	\$10.00	\$15.15	\$0.00	\$66.52
	05/01/2017	\$42.15	\$10.00	\$15.25	\$0.00	\$67.40
	11/01/2017	\$42.88	\$10.00	\$15.25	\$0.00	\$68.13
	05/01/2018	\$43.59	\$10.00	\$15.25	\$0.00	\$68.84

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2016	\$42.82	\$10.00	\$15.15	\$0.00	\$67.97
	05/01/2017	\$43.61	\$10.00	\$15.25	\$0.00	\$68.86
	11/01/2017	\$44.34	\$10.00	\$15.25	\$0.00	\$69.59
	05/01/2018	\$45.06	\$10.00	\$15.25	\$0.00	\$70.31

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2016	\$21.98	\$10.00	\$15.15	\$0.00	\$47.13
	05/01/2017	\$22.41	\$10.00	\$15.25	\$0.00	\$47.66
	11/01/2017	\$22.83	\$10.00	\$15.25	\$0.00	\$48.08
	05/01/2018	\$23.26	\$10.00	\$15.25	\$0.00	\$48.51

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 103</i>	03/01/2017	\$48.33	\$13.00	\$17.45	\$0.00	\$78.78
	09/01/2017	\$49.28	\$13.00	\$17.48	\$0.00	\$79.76
	03/01/2018	\$50.48	\$13.00	\$17.51	\$0.00	\$80.99
	09/01/2018	\$51.67	\$13.00	\$17.55	\$0.00	\$82.22
	03/01/2019	\$52.87	\$13.00	\$17.59	\$0.00	\$83.46

For apprentice rates see "Apprentice- ELECTRICIAN"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS</i>	03/01/2017	\$36.25	\$13.00	\$15.60	\$0.00	\$64.85
<i>LOCAL 103</i>	09/01/2017	\$36.96	\$13.00	\$15.62	\$0.00	\$65.58
	03/01/2018	\$37.86	\$13.00	\$15.65	\$0.00	\$66.51
	09/01/2018	\$38.75	\$13.00	\$15.67	\$0.00	\$67.42
	03/01/2019	\$39.65	\$13.00	\$15.70	\$0.00	\$68.35
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2016	\$37.65	\$10.00	\$15.25	\$0.00	\$62.90
	06/01/2017	\$38.49	\$10.00	\$15.25	\$0.00	\$63.74
	12/01/2017	\$39.32	\$10.00	\$15.25	\$0.00	\$64.57
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER <i>LABORERS - ZONE 2</i>	12/01/2016	\$20.50	\$7.60	\$13.00	\$0.00	\$41.10
For apprentice rates see "Apprentice- LABORER"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE 1</i>	03/01/2016	\$42.13	\$9.80	\$17.62	\$0.00	\$69.55

**Apprentice - FLOORCOVERER - Local 2168 Zone 1**

**Effective Date - 03/01/2016**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.07	\$9.80	\$1.79	\$0.00	\$32.66
2	55	\$23.17	\$9.80	\$1.79	\$0.00	\$34.76
3	60	\$25.28	\$9.80	\$12.25	\$0.00	\$47.33
4	65	\$27.38	\$9.80	\$12.25	\$0.00	\$49.43
5	70	\$29.49	\$9.80	\$14.04	\$0.00	\$53.33
6	75	\$31.60	\$9.80	\$14.04	\$0.00	\$55.44
7	80	\$33.70	\$9.80	\$15.83	\$0.00	\$59.33
8	85	\$35.81	\$9.80	\$15.83	\$0.00	\$61.44

**Notes:**

Steps are 750 hrs.

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

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2016	\$45.38	\$10.00	\$15.25	\$0.00	\$70.63
	06/01/2017	\$46.38	\$10.00	\$15.25	\$0.00	\$71.63
	12/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	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
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	01/01/2017	\$40.91	\$7.85	\$16.10	\$0.00	\$64.86

**Classification**

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

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

**Effective Date - 01/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.46	\$7.85	\$0.00	\$0.00	\$28.31
2	55	\$22.50	\$7.85	\$3.66	\$0.00	\$34.01
3	60	\$24.55	\$7.85	\$3.99	\$0.00	\$36.39
4	65	\$26.59	\$7.85	\$4.32	\$0.00	\$38.76
5	70	\$28.64	\$7.85	\$14.11	\$0.00	\$50.60
6	75	\$30.68	\$7.85	\$14.44	\$0.00	\$52.97
7	80	\$32.73	\$7.85	\$14.77	\$0.00	\$55.35
8	90	\$36.82	\$7.85	\$15.44	\$0.00	\$60.11

**Notes:**  
Steps are 750 hrs.

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

HOISTING ENGINEER/CRANES/GRADALLS	12/01/2016	\$45.38	\$10.00	\$15.25	\$0.00	\$70.63
OPERATING ENGINEERS LOCAL 4	06/01/2017	\$46.38	\$10.00	\$15.25	\$0.00	\$71.63
	12/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63

**Classification**

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

**Apprentice - OPERATING ENGINEERS - Local 4**

**Effective Date - 12/01/2016**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$24.96	\$10.00	\$0.00	\$0.00	\$34.96
2	60	\$27.23	\$10.00	\$15.25	\$0.00	\$52.48
3	65	\$29.50	\$10.00	\$15.25	\$0.00	\$54.75
4	70	\$31.77	\$10.00	\$15.25	\$0.00	\$57.02
5	75	\$34.04	\$10.00	\$15.25	\$0.00	\$59.29
6	80	\$36.30	\$10.00	\$15.25	\$0.00	\$61.55
7	85	\$38.57	\$10.00	\$15.25	\$0.00	\$63.82
8	90	\$40.84	\$10.00	\$15.25	\$0.00	\$66.09

**Effective Date - 06/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$25.51	\$10.00	\$0.00	\$0.00	\$35.51
2	60	\$27.83	\$10.00	\$15.25	\$0.00	\$53.08
3	65	\$30.15	\$10.00	\$15.25	\$0.00	\$55.40
4	70	\$32.47	\$10.00	\$15.25	\$0.00	\$57.72
5	75	\$34.79	\$10.00	\$15.25	\$0.00	\$60.04
6	80	\$37.10	\$10.00	\$15.25	\$0.00	\$62.35
7	85	\$39.42	\$10.00	\$15.25	\$0.00	\$64.67
8	90	\$41.74	\$10.00	\$15.25	\$0.00	\$66.99

**Notes:**

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

HVAC (DUCTWORK) SHEETMETAL WORKERS LOCAL 17 - A	02/01/2017	\$43.72	\$11.45	\$23.07	\$2.35	\$80.59
	08/01/2017	\$44.82	\$11.45	\$23.07	\$2.35	\$81.69
	02/01/2018	\$45.97	\$11.45	\$23.07	\$2.35	\$82.84

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS) ELECTRICIANS LOCAL 103	03/01/2017	\$48.33	\$13.00	\$17.45	\$0.00	\$78.78
	09/01/2017	\$49.28	\$13.00	\$17.48	\$0.00	\$79.76
	03/01/2018	\$50.48	\$13.00	\$17.51	\$0.00	\$80.99
	09/01/2018	\$51.67	\$13.00	\$17.55	\$0.00	\$82.22
	03/01/2019	\$52.87	\$13.00	\$17.59	\$0.00	\$83.46

For apprentice rates see "Apprentice- ELECTRICIAN"

HVAC (TESTING AND BALANCING - AIR) SHEETMETAL WORKERS LOCAL 17 - A	02/01/2017	\$43.72	\$11.45	\$23.07	\$2.35	\$80.59
	08/01/2017	\$44.82	\$11.45	\$23.07	\$2.35	\$81.69
	02/01/2018	\$45.97	\$11.45	\$23.07	\$2.35	\$82.84

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (TESTING AND BALANCING -WATER) PIPEFITTERS LOCAL 537 (Local 138)	03/01/2017	\$48.86	\$9.70	\$16.14	\$0.00	\$74.70
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For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

HVAC MECHANIC PIPEFITTERS LOCAL 537 (Local 138)	03/01/2017	\$48.86	\$9.70	\$16.14	\$0.00	\$74.70
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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS LABORERS - ZONE 2	12/01/2016	\$32.65	\$7.60	\$13.00	\$0.00	\$53.25
	06/01/2017	\$33.65	\$7.60	\$13.00	\$0.00	\$54.25
	12/01/2017	\$34.28	\$7.60	\$13.00	\$0.00	\$54.88
	06/01/2018	\$35.12	\$7.60	\$13.00	\$0.00	\$55.72
	12/01/2018	\$35.96	\$7.60	\$13.00	\$0.00	\$56.56
	06/01/2019	\$36.83	\$7.60	\$13.00	\$0.00	\$57.43
	12/01/2019	\$37.69	\$7.60	\$13.00	\$0.00	\$58.29

For apprentice rates see "Apprentice- LABORER"						
INSULATOR (PIPES & TANKS) HEAT & FROST INSULATORS LOCAL 6 (BOSTON)	09/01/2016	\$45.09	\$11.75	\$14.20	\$0.00	\$71.04
	09/01/2017	\$47.09	\$11.75	\$14.20	\$0.00	\$73.04
	09/01/2018	\$49.34	\$11.75	\$14.20	\$0.00	\$75.29
	09/01/2019	\$51.84	\$11.75	\$14.20	\$0.00	\$77.79

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

**Effective Date - 09/01/2016**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.55	\$11.75	\$10.45	\$0.00	\$44.75
2	60	\$27.05	\$11.75	\$11.20	\$0.00	\$50.00
3	70	\$31.56	\$11.75	\$11.95	\$0.00	\$55.26
4	80	\$36.07	\$11.75	\$12.70	\$0.00	\$60.52

**Effective Date - 09/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.55	\$11.75	\$10.45	\$0.00	\$45.75
2	60	\$28.25	\$11.75	\$11.20	\$0.00	\$51.20
3	70	\$32.96	\$11.75	\$11.95	\$0.00	\$56.66
4	80	\$37.67	\$11.75	\$12.70	\$0.00	\$62.12

**Notes:**

Steps are 1 year

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

IRONWORKER/WELDER IRONWORKERS LOCAL 7 (LAWRENCE AREA)	03/16/2017	\$40.24	\$7.80	\$20.85	\$0.00	\$68.89
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**Classification**

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

**Apprentice - IRONWORKER - Local 7 Lawrence**

**Effective Date - 03/16/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.14	\$7.80	\$20.85	\$0.00	\$52.79
2	70	\$28.17	\$7.80	\$20.85	\$0.00	\$56.82
3	75	\$30.18	\$7.80	\$20.85	\$0.00	\$58.83
4	80	\$32.19	\$7.80	\$20.85	\$0.00	\$60.84
5	85	\$34.20	\$7.80	\$20.85	\$0.00	\$62.85
6	90	\$36.22	\$7.80	\$20.85	\$0.00	\$64.87

**Notes:**

Structural 1:6; Ornamental 1:4

**Apprentice to Journeyworker Ratio:**

JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 2	12/01/2016	\$32.15	\$7.60	\$13.00	\$0.00	\$52.75
	06/01/2017	\$33.15	\$7.60	\$13.00	\$0.00	\$53.75
	12/01/2017	\$33.78	\$7.60	\$13.00	\$0.00	\$54.38
	06/01/2018	\$34.62	\$7.60	\$13.00	\$0.00	\$55.22
	12/01/2018	\$35.46	\$7.60	\$13.00	\$0.00	\$56.06
	06/01/2019	\$36.33	\$7.60	\$13.00	\$0.00	\$56.93
	12/01/2019	\$37.19	\$7.60	\$13.00	\$0.00	\$57.79

For apprentice rates see "Apprentice- LABORER"

LABORER LABORERS - ZONE 2	12/01/2016	\$31.90	\$7.60	\$13.00	\$0.00	\$52.50
	06/01/2017	\$32.90	\$7.60	\$13.00	\$0.00	\$53.50
	12/01/2017	\$33.53	\$7.60	\$13.00	\$0.00	\$54.13
	06/01/2018	\$34.37	\$7.60	\$13.00	\$0.00	\$54.97
	12/01/2018	\$35.21	\$7.60	\$13.00	\$0.00	\$55.81
	06/01/2019	\$36.08	\$7.60	\$13.00	\$0.00	\$56.68
	12/01/2019	\$36.94	\$7.60	\$13.00	\$0.00	\$57.54

**Classification**

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

**Apprentice - LABORER - Zone 2**

**Effective Date - 12/01/2016**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.14	\$7.60	\$13.00	\$0.00	\$39.74
2	70	\$22.33	\$7.60	\$13.00	\$0.00	\$42.93
3	80	\$25.52	\$7.60	\$13.00	\$0.00	\$46.12
4	90	\$28.71	\$7.60	\$13.00	\$0.00	\$49.31

**Effective Date - 06/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.74	\$7.60	\$13.00	\$0.00	\$40.34
2	70	\$23.03	\$7.60	\$13.00	\$0.00	\$43.63
3	80	\$26.32	\$7.60	\$13.00	\$0.00	\$46.92
4	90	\$29.61	\$7.60	\$13.00	\$0.00	\$50.21

**Notes:**

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

LABORER: CARPENTER TENDER LABORERS - ZONE 2	12/01/2016	\$31.90	\$7.60	\$13.00	\$0.00	\$52.50
	06/01/2017	\$32.90	\$7.60	\$13.00	\$0.00	\$53.50
	12/01/2017	\$33.53	\$7.60	\$13.00	\$0.00	\$54.13
	06/01/2018	\$34.37	\$7.60	\$13.00	\$0.00	\$54.97
	12/01/2018	\$35.21	\$7.60	\$13.00	\$0.00	\$55.81
	06/01/2019	\$36.08	\$7.60	\$13.00	\$0.00	\$56.68
	12/01/2019	\$36.94	\$7.60	\$13.00	\$0.00	\$57.54

For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER LABORERS - ZONE 2	12/01/2016	\$31.90	\$7.60	\$13.00	\$0.00	\$52.50
	06/01/2017	\$32.90	\$7.60	\$13.00	\$0.00	\$53.50
	12/01/2017	\$33.53	\$7.60	\$13.00	\$0.00	\$54.13
	06/01/2018	\$34.37	\$7.60	\$13.00	\$0.00	\$54.97
	12/01/2018	\$35.21	\$7.60	\$13.00	\$0.00	\$55.81
	06/01/2019	\$36.08	\$7.60	\$13.00	\$0.00	\$56.68
	12/01/2019	\$36.94	\$7.60	\$13.00	\$0.00	\$57.54

For apprentice rates see "Apprentice- LABORER"

LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER LABORERS - ZONE 2	12/01/2016	\$32.10	\$7.60	\$12.95	\$0.00	\$52.65
	06/01/2017	\$33.10	\$7.60	\$12.95	\$0.00	\$53.65
	12/01/2017	\$33.73	\$7.60	\$12.95	\$0.00	\$54.28
	06/01/2018	\$34.57	\$7.60	\$12.95	\$0.00	\$55.12
	12/01/2018	\$35.41	\$7.60	\$12.95	\$0.00	\$55.96
	06/01/2019	\$36.28	\$7.60	\$12.95	\$0.00	\$56.83
	12/01/2019	\$37.14	\$7.60	\$12.95	\$0.00	\$57.69

For apprentice rates see "Apprentice- LABORER"

<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
<b>LABORER: MASON TENDER</b> <i>LABORERS - ZONE 2</i>	12/01/2016	\$32.15	\$7.60	\$13.00	\$0.00	\$52.75
	06/01/2017	\$33.15	\$7.60	\$13.00	\$0.00	\$53.75
	12/01/2017	\$33.78	\$7.60	\$13.00	\$0.00	\$54.38
	06/01/2018	\$34.62	\$7.60	\$13.00	\$0.00	\$55.22
	12/01/2018	\$35.46	\$7.60	\$13.00	\$0.00	\$56.06
	06/01/2019	\$36.33	\$7.60	\$13.00	\$0.00	\$56.93
	12/01/2019	\$37.19	\$7.60	\$13.00	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						
<b>LABORER: MULTI-TRADE TENDER</b> <i>LABORERS - ZONE 2</i>	12/01/2016	\$31.90	\$7.60	\$13.00	\$0.00	\$52.50
	06/01/2017	\$32.90	\$7.60	\$13.00	\$0.00	\$53.50
	12/01/2017	\$33.53	\$7.60	\$13.00	\$0.00	\$54.13
	06/01/2018	\$34.37	\$7.60	\$13.00	\$0.00	\$54.97
	12/01/2018	\$35.21	\$7.60	\$13.00	\$0.00	\$55.81
	06/01/2019	\$36.08	\$7.60	\$13.00	\$0.00	\$56.68
	12/01/2019	\$36.94	\$7.60	\$13.00	\$0.00	\$57.54
For apprentice rates see "Apprentice- LABORER"						
<b>LABORER: TREE REMOVER</b> <i>LABORERS - ZONE 2</i>	12/01/2016	\$31.90	\$7.60	\$13.00	\$0.00	\$52.50
	06/01/2017	\$32.90	\$7.60	\$13.00	\$0.00	\$53.50
	12/01/2017	\$33.53	\$7.60	\$13.00	\$0.00	\$54.13
	06/01/2018	\$34.37	\$7.60	\$13.00	\$0.00	\$54.97
	12/01/2018	\$35.21	\$7.60	\$13.00	\$0.00	\$55.81
	06/01/2019	\$36.08	\$7.60	\$13.00	\$0.00	\$56.68
	12/01/2019	\$36.94	\$7.60	\$13.00	\$0.00	\$57.54
This classification applies to all tree work associated with the removal of standing trees, and trimming and removal of branches and limbs when the work is not done for a utility company for the purpose of operation, maintenance or repair of utility company equipment. For apprentice rates see "Apprentice- LABORER"						
<b>LASER BEAM OPERATOR</b> <i>LABORERS - ZONE 2</i>	12/01/2016	\$32.15	\$7.60	\$13.00	\$0.00	\$52.75
	06/01/2017	\$33.15	\$7.60	\$13.00	\$0.00	\$53.75
	12/01/2017	\$33.78	\$7.60	\$13.00	\$0.00	\$54.38
	06/01/2018	\$34.62	\$7.60	\$13.00	\$0.00	\$55.22
	12/01/2018	\$35.46	\$7.60	\$13.00	\$0.00	\$56.06
	06/01/2019	\$36.33	\$7.60	\$13.00	\$0.00	\$56.93
	12/01/2019	\$37.19	\$7.60	\$13.00	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						
<b>MARBLE &amp; TILE FINISHERS</b> <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	02/01/2017	\$38.78	\$10.75	\$17.67	\$0.00	\$67.20

**Classification**

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

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

**Effective Date - 02/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.39	\$10.75	\$17.67	\$0.00	\$47.81
2	60	\$23.27	\$10.75	\$17.67	\$0.00	\$51.69
3	70	\$27.15	\$10.75	\$17.67	\$0.00	\$55.57
4	80	\$31.02	\$10.75	\$17.67	\$0.00	\$59.44
5	90	\$34.90	\$10.75	\$17.67	\$0.00	\$63.32

**Notes:**

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

MARBLE MASONS, TILELAYERS & TERRAZZO MECH BRICKLAYERS LOCAL 3 - MARBLE & TILE	02/01/2017	\$50.80	\$10.75	\$19.22	\$0.00	\$80.77
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**Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile**

**Effective Date - 02/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.40	\$10.75	\$19.22	\$0.00	\$55.37
2	60	\$30.48	\$10.75	\$19.22	\$0.00	\$60.45
3	70	\$35.56	\$10.75	\$19.22	\$0.00	\$65.53
4	80	\$40.64	\$10.75	\$19.22	\$0.00	\$70.61
5	90	\$45.72	\$10.75	\$19.22	\$0.00	\$75.69

**Notes:**

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

MECH. SWEEPER OPERATOR (ON CONST. SITES) 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"

MECHANICS MAINTENANCE 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"

MILLWRIGHT (Zone 2) MILLWRIGHTS LOCAL 1121 - Zone 2	04/01/2017	\$35.47	\$9.90	\$18.50	\$0.00	\$63.87
	10/01/2017	\$36.32	\$9.90	\$18.50	\$0.00	\$64.72
	04/01/2018	\$37.17	\$9.90	\$18.50	\$0.00	\$65.57
	10/01/2018	\$38.02	\$9.90	\$18.50	\$0.00	\$66.42
	04/01/2019	\$38.87	\$9.90	\$18.50	\$0.00	\$67.27

**Classification**

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

**Apprentice - MILLWRIGHT - Local 1121 Zone 2**

**Effective Date - 04/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$19.51	\$9.90	\$5.31	\$0.00	\$34.72
2	65	\$23.06	\$9.90	\$15.13	\$0.00	\$48.09
3	75	\$26.60	\$9.90	\$16.10	\$0.00	\$52.60
4	85	\$30.15	\$9.90	\$17.06	\$0.00	\$57.11

**Effective Date - 10/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$19.98	\$9.90	\$5.31	\$0.00	\$35.19
2	65	\$23.61	\$9.90	\$15.13	\$0.00	\$48.64
3	75	\$27.24	\$9.90	\$16.10	\$0.00	\$53.24
4	85	\$30.87	\$9.90	\$15.06	\$0.00	\$55.83

**Notes:**

Steps are 2,000 hours

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

<b>MORTAR MIXER</b> <i>LABORERS - ZONE 2</i>	12/01/2016	\$32.15	\$7.60	\$13.00	\$0.00	\$52.75
	06/01/2017	\$33.15	\$7.60	\$13.00	\$0.00	\$53.75
	12/01/2017	\$33.78	\$7.60	\$13.00	\$0.00	\$54.38
	06/01/2018	\$34.62	\$7.60	\$13.00	\$0.00	\$55.22
	12/01/2018	\$35.46	\$7.60	\$13.00	\$0.00	\$56.06
	06/01/2019	\$36.33	\$7.60	\$13.00	\$0.00	\$56.93
	12/01/2019	\$37.19	\$7.60	\$13.00	\$0.00	\$57.79

For apprentice rates see "Apprentice- LABORER"

<b>OILER (OTHER THAN TRUCK CRANES, GRADALLS)</b> <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2016	\$22.96	\$10.00	\$15.25	\$0.00	\$48.21
	06/01/2017	\$23.47	\$10.00	\$15.25	\$0.00	\$48.72
	12/01/2017	\$23.99	\$10.00	\$15.25	\$0.00	\$49.24

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>OILER (TRUCK CRANES, GRADALLS)</b> <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2016	\$26.94	\$10.00	\$15.25	\$0.00	\$52.19
	06/01/2017	\$27.54	\$10.00	\$15.25	\$0.00	\$52.79
	12/01/2017	\$28.15	\$10.00	\$15.25	\$0.00	\$53.40

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>OTHER POWER DRIVEN EQUIPMENT - CLASS II</b> <i>OPERATING ENGINEERS LOCAL 4</i>	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"

<b>PAINTER (BRIDGES/TANKS)</b> <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2017	\$51.41	\$7.85	\$16.10	\$0.00	\$75.36
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Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 01/01/2017

Table with 8 columns: Step, percent, Apprentice Base Wage, Health, Pension, Supplemental Unemployment, Total Rate. Rows 1-8 showing wage progression from \$25.71 to \$46.27.

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) \* 01/01/2017 \$42.31 \$7.85 \$16.10 \$0.00 \$66.26

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

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

Effective Date - 01/01/2017

Table with 8 columns: Step, percent, Apprentice Base Wage, Health, Pension, Supplemental Unemployment, Total Rate. Rows 1-8 showing wage progression from \$21.16 to \$38.08.

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT) 01/01/2017 \$40.37 \$7.85 \$16.10 \$0.00 \$64.32

PAINTERS LOCAL 35 - ZONE 2

**Classification**

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

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

**Effective Date - 01/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.19	\$7.85	\$0.00	\$0.00	\$28.04
2	55	\$22.20	\$7.85	\$3.66	\$0.00	\$33.71
3	60	\$24.22	\$7.85	\$3.99	\$0.00	\$36.06
4	65	\$26.24	\$7.85	\$4.32	\$0.00	\$38.41
5	70	\$28.26	\$7.85	\$14.11	\$0.00	\$50.22
6	75	\$30.28	\$7.85	\$14.44	\$0.00	\$52.57
7	80	\$32.30	\$7.85	\$14.77	\$0.00	\$54.92
8	90	\$36.33	\$7.85	\$15.44	\$0.00	\$59.62

**Notes:**

Steps are 750 hrs.

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

PAINTER (TRAFFIC MARKINGS) LABORERS - ZONE 2	12/01/2016	\$31.90	\$7.60	\$13.00	\$0.00	\$52.50
	06/01/2017	\$32.90	\$7.60	\$13.00	\$0.00	\$53.50
	12/01/2017	\$33.53	\$7.60	\$13.00	\$0.00	\$54.13
	06/01/2018	\$34.37	\$7.60	\$13.00	\$0.00	\$54.97
	12/01/2018	\$35.21	\$7.60	\$13.00	\$0.00	\$55.81
	06/01/2019	\$36.08	\$7.60	\$13.00	\$0.00	\$56.68
	12/01/2019	\$36.94	\$7.60	\$13.00	\$0.00	\$57.54

For Apprentice rates see "Apprentice- LABORER"

PAINTER / TAPER (BRUSH, NEW) *	01/01/2017	\$40.91	\$7.85	\$16.10	\$0.00	\$64.86
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\* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2

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

**Effective Date - 01/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.46	\$7.85	\$0.00	\$0.00	\$28.31
2	55	\$22.50	\$7.85	\$3.66	\$0.00	\$34.01
3	60	\$24.55	\$7.85	\$3.99	\$0.00	\$36.39
4	65	\$26.59	\$7.85	\$4.32	\$0.00	\$38.76
5	70	\$28.64	\$7.85	\$14.11	\$0.00	\$50.60
6	75	\$30.68	\$7.85	\$14.44	\$0.00	\$52.97
7	80	\$32.73	\$7.85	\$14.77	\$0.00	\$55.35
8	90	\$36.82	\$7.85	\$15.44	\$0.00	\$60.11

**Notes:**

Steps are 750 hrs.

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



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PAINTER / TAPER (BRUSH, REPAINT) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2017	\$38.97	\$7.85	\$16.10	\$0.00	\$62.92

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

**Effective Date - 01/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.49	\$7.85	\$0.00	\$0.00	\$27.34
2	55	\$21.43	\$7.85	\$3.66	\$0.00	\$32.94
3	60	\$23.38	\$7.85	\$3.99	\$0.00	\$35.22
4	65	\$25.33	\$7.85	\$4.32	\$0.00	\$37.50
5	70	\$27.28	\$7.85	\$14.11	\$0.00	\$49.24
6	75	\$29.23	\$7.85	\$14.44	\$0.00	\$51.52
7	80	\$31.18	\$7.85	\$14.77	\$0.00	\$53.80
8	90	\$35.07	\$7.85	\$15.44	\$0.00	\$58.36

**Notes:**

Steps are 750 hrs.

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

PANEL & PICKUP TRUCKS DRIVER <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2012	\$30.28	\$9.07	\$8.00	\$0.00	\$47.35
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PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i> For apprentice rates see "Apprentice- PILE DRIVER"	08/01/2015	\$42.04	\$9.80	\$19.23	\$0.00	\$71.07
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PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$42.04	\$9.80	\$19.23	\$0.00	\$71.07
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**Apprentice - PILE DRIVER - Local 56 Zone 1**

**Effective Date - 08/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.02	\$9.80	\$19.23	\$0.00	\$50.05
2	60	\$25.22	\$9.80	\$19.23	\$0.00	\$54.25
3	70	\$29.43	\$9.80	\$19.23	\$0.00	\$58.46
4	75	\$31.53	\$9.80	\$19.23	\$0.00	\$60.56
5	80	\$33.63	\$9.80	\$19.23	\$0.00	\$62.66
6	80	\$33.63	\$9.80	\$19.23	\$0.00	\$62.66
7	90	\$37.84	\$9.80	\$19.23	\$0.00	\$66.87
8	90	\$37.84	\$9.80	\$19.23	\$0.00	\$66.87

**Notes:**

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

PIPEFITTER & STEAMFITTER <i>PIPEFITTERS LOCAL 537 (Local 138)</i>	03/01/2017	\$48.86	\$9.70	\$16.14	\$0.00	\$74.70
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**Classification**

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

**Apprentice - PIPEFITTER Local 537 (Local 138)**

**Effective Date - 03/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$19.54	\$9.70	\$5.50	\$0.00	\$34.74
2	45	\$21.99	\$9.70	\$16.14	\$0.00	\$47.83
3	60	\$29.32	\$9.70	\$16.14	\$0.00	\$55.16
4	70	\$34.20	\$9.70	\$16.14	\$0.00	\$60.04
5	80	\$39.09	\$9.70	\$16.14	\$0.00	\$64.93

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

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

PIPELAYER LABORERS - ZONE 2	12/01/2016	\$32.15	\$7.60	\$13.00	\$0.00	\$52.75
	06/01/2017	\$33.15	\$7.60	\$13.00	\$0.00	\$53.75
	12/01/2017	\$33.78	\$7.60	\$13.00	\$0.00	\$54.38
	06/01/2018	\$34.62	\$7.60	\$13.00	\$0.00	\$55.22
	12/01/2018	\$35.46	\$7.60	\$13.00	\$0.00	\$56.06
	06/01/2019	\$36.33	\$7.60	\$13.00	\$0.00	\$56.93
	12/01/2019	\$37.19	\$7.60	\$13.00	\$0.00	\$57.79

For apprentice rates see "Apprentice- LABORER"

PLUMBER PLUMBERS & GASFITTERS LOCAL 12 (Local 138)	03/01/2017	\$48.61	\$11.32	\$15.46	\$0.00	\$75.39
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**Apprentice - PLUMBER/GASFITTER - Local 12 (Local 138)**

**Effective Date - 03/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$17.01	\$11.32	\$5.74	\$0.00	\$34.07
2	40	\$19.44	\$11.32	\$6.49	\$0.00	\$37.25
3	55	\$26.74	\$11.32	\$8.73	\$0.00	\$46.79
4	65	\$31.60	\$11.32	\$10.23	\$0.00	\$53.15
5	75	\$36.46	\$11.32	\$11.72	\$0.00	\$59.50

**Notes:**  
 Steps are 1 yr  
 Step 4 with lic\$55.65 Step5 with lic\$61.89

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

PNEUMATIC CONTROLS (TEMP.) PIPEFITTERS LOCAL 537 (Local 138)	03/01/2017	\$48.86	\$9.70	\$16.14	\$0.00	\$74.70
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For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2016	\$32.15	\$7.60	\$13.00	\$0.00	\$52.75
	06/01/2017	\$33.15	\$7.60	\$13.00	\$0.00	\$53.75
	12/01/2017	\$33.78	\$7.60	\$13.00	\$0.00	\$54.38
	06/01/2018	\$34.62	\$7.60	\$13.00	\$0.00	\$55.22
	12/01/2018	\$35.46	\$7.60	\$13.00	\$0.00	\$56.06
	06/01/2019	\$36.33	\$7.60	\$13.00	\$0.00	\$56.93
	12/01/2019	\$37.19	\$7.60	\$13.00	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						
POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	12/01/2016	\$32.90	\$7.60	\$13.00	\$0.00	\$53.50
	06/01/2017	\$33.90	\$7.60	\$13.00	\$0.00	\$54.50
	12/01/2017	\$34.53	\$7.60	\$13.00	\$0.00	\$55.13
	06/01/2018	\$35.37	\$7.60	\$13.00	\$0.00	\$55.97
	12/01/2018	\$36.21	\$7.60	\$13.00	\$0.00	\$56.81
	06/01/2019	\$37.08	\$7.60	\$13.00	\$0.00	\$57.68
	12/01/2019	\$37.94	\$7.60	\$13.00	\$0.00	\$58.54
For apprentice rates see "Apprentice- LABORER"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2016	\$45.38	\$10.00	\$15.25	\$0.00	\$70.63
	06/01/2017	\$46.38	\$10.00	\$15.25	\$0.00	\$71.63
	12/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2016	\$45.38	\$10.00	\$15.25	\$0.00	\$70.63
	06/01/2017	\$46.38	\$10.00	\$15.25	\$0.00	\$71.63
	12/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	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
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS LOCAL 42</i>	05/01/2016	\$24.15	\$8.49	\$10.68	\$0.00	\$43.32
	04/30/2017	\$24.15	\$8.49	\$11.07	\$0.00	\$43.71
	05/01/2017	\$24.21	\$8.49	\$11.54	\$0.00	\$44.24
	04/30/2018	\$24.21	\$8.49	\$11.96	\$0.00	\$44.66
	05/01/2018	\$24.24	\$8.49	\$12.46	\$0.00	\$45.19
	04/30/2019	\$24.24	\$8.49	\$12.92	\$0.00	\$45.65
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	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"						
RESIDENTIAL WOOD FRAME (All Other Work) <i>CARPENTERS -ZONE 2 (Residential Wood)</i>	06/01/2016	\$25.32	\$9.80	\$16.82	\$0.00	\$51.94
RESIDENTIAL WOOD FRAME CARPENTER ** ** 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. <i>CARPENTERS -ZONE 2 (Residential Wood)</i>	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.						

**Classification**

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

**Apprentice - CARPENTER (Residential Wood Frame) - Zone 2**

**Effective Date - 04/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$15.79	\$7.07	\$0.00	\$0.00	\$22.86
2	60	\$15.79	\$7.07	\$0.00	\$0.00	\$22.86
3	65	\$17.10	\$7.07	\$7.18	\$0.00	\$31.35
4	70	\$18.42	\$7.07	\$7.18	\$0.00	\$32.67
5	75	\$19.73	\$7.07	\$7.18	\$0.00	\$33.98
6	80	\$21.05	\$7.07	\$7.18	\$0.00	\$35.30
7	85	\$22.36	\$7.07	\$7.18	\$0.00	\$36.61
8	90	\$23.68	\$7.07	\$7.18	\$0.00	\$37.93

**Effective Date - 10/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.16	\$7.07	\$0.00	\$0.00	\$23.23
2	60	\$16.16	\$7.07	\$0.00	\$0.00	\$23.23
3	65	\$17.50	\$7.07	\$7.18	\$0.00	\$31.75
4	70	\$18.85	\$7.07	\$7.18	\$0.00	\$33.10
5	75	\$20.20	\$7.07	\$7.18	\$0.00	\$34.45
6	80	\$21.54	\$7.07	\$7.18	\$0.00	\$35.79
7	85	\$22.89	\$7.07	\$7.18	\$0.00	\$37.14
8	90	\$24.24	\$7.07	\$7.18	\$0.00	\$38.49

**Notes:**

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

RIDE-ON MOTORIZED BUGGY OPERATOR LABORERS - ZONE 2	12/01/2016	\$32.15	\$7.60	\$13.00	\$0.00	\$52.75
	06/01/2017	\$33.15	\$7.60	\$13.00	\$0.00	\$53.75
	12/01/2017	\$33.78	\$7.60	\$13.00	\$0.00	\$54.38
	06/01/2018	\$34.62	\$7.60	\$13.00	\$0.00	\$55.22
	12/01/2018	\$35.46	\$7.60	\$13.00	\$0.00	\$56.06
	06/01/2019	\$36.33	\$7.60	\$13.00	\$0.00	\$56.93
	12/01/2019	\$37.19	\$7.60	\$13.00	\$0.00	\$57.79

For apprentice rates see "Apprentice- LABORER"

ROLLER/SPREADER/MULCHING MACHINE 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"

ROOFER (Inc.Roofing Waterproofing &Roofing Damproofg) ROOFERS LOCAL 33	02/01/2017	\$41.36	\$11.10	\$13.80	\$0.00	\$66.26
	08/01/2017	\$42.46	\$11.10	\$13.80	\$0.00	\$67.36
	02/01/2018	\$43.61	\$11.10	\$13.80	\$0.00	\$68.51
	08/01/2018	\$44.71	\$11.10	\$13.80	\$0.00	\$69.61
	02/01/2019	\$45.86	\$11.10	\$13.80	\$0.00	\$70.76

**Classification**

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

**Apprentice - ROOFER - Local 33**

**Effective Date - 02/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.68	\$11.10	\$3.44	\$0.00	\$35.22
2	60	\$24.82	\$11.10	\$13.80	\$0.00	\$49.72
3	65	\$26.88	\$11.10	\$13.80	\$0.00	\$51.78
4	75	\$31.02	\$11.10	\$13.80	\$0.00	\$55.92
5	85	\$35.16	\$11.10	\$13.80	\$0.00	\$60.06

**Effective Date - 08/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.23	\$11.10	\$3.44	\$0.00	\$35.77
2	60	\$25.48	\$11.10	\$13.80	\$0.00	\$50.38
3	65	\$27.60	\$11.10	\$13.80	\$0.00	\$52.50
4	75	\$31.85	\$11.10	\$13.80	\$0.00	\$56.75
5	85	\$36.09	\$11.10	\$13.80	\$0.00	\$60.99

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

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

ROOFER SLATE / TILE / PRECAST CONCRETE	02/01/2017	\$41.61	\$11.10	\$13.80	\$0.00	\$66.51
ROOFERS LOCAL 33	08/01/2017	\$42.71	\$11.10	\$13.80	\$0.00	\$67.61
	02/01/2018	\$43.86	\$11.10	\$13.80	\$0.00	\$68.76
	08/01/2018	\$44.96	\$11.10	\$13.80	\$0.00	\$69.86
	02/01/2019	\$46.11	\$11.10	\$13.80	\$0.00	\$71.01
For apprentice rates see "Apprentice- ROOFER"						
SHEETMETAL WORKER	02/01/2017	\$43.72	\$11.45	\$23.07	\$2.35	\$80.59
SHEETMETAL WORKERS LOCAL 17 - A	08/01/2017	\$44.82	\$11.45	\$23.07	\$2.35	\$81.69
	02/01/2018	\$45.97	\$11.45	\$23.07	\$2.35	\$82.84

**Classification**

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

**Apprentice - SHEET METAL WORKER - Local 17-A**

**Effective Date - 02/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.49	\$11.45	\$5.24	\$0.00	\$34.18
2	40	\$17.49	\$11.45	\$5.24	\$0.00	\$34.18
3	45	\$19.67	\$11.45	\$10.31	\$1.24	\$42.67
4	45	\$19.67	\$11.45	\$10.31	\$1.24	\$42.67
5	50	\$21.86	\$11.45	\$11.21	\$1.34	\$45.86
6	50	\$21.86	\$11.45	\$11.46	\$1.34	\$46.11
7	60	\$26.23	\$11.45	\$13.02	\$1.52	\$52.22
8	65	\$28.42	\$11.45	\$13.93	\$1.61	\$55.41
9	75	\$32.79	\$11.45	\$15.74	\$1.80	\$61.78
10	85	\$37.16	\$11.45	\$17.05	\$1.97	\$67.63

**Effective Date - 08/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.93	\$11.45	\$5.24	\$0.00	\$34.62
2	40	\$17.93	\$11.45	\$5.24	\$0.00	\$34.62
3	45	\$20.17	\$11.45	\$10.31	\$1.26	\$43.19
4	45	\$20.17	\$11.45	\$10.31	\$1.26	\$43.19
5	50	\$22.41	\$11.45	\$11.21	\$1.35	\$46.42
6	50	\$22.41	\$11.45	\$11.46	\$1.36	\$46.68
7	60	\$26.89	\$11.45	\$13.02	\$1.54	\$52.90
8	65	\$29.13	\$11.45	\$13.93	\$1.64	\$56.15
9	75	\$33.62	\$11.45	\$15.74	\$1.82	\$62.63
10	85	\$38.10	\$11.45	\$17.05	\$2.00	\$68.60

**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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**Classification**

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

**Apprentice - SIGN ERECTOR - Local 35 Zone 2**

**Effective Date - 06/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$12.91	\$7.07	\$0.00	\$0.00	\$19.98
2	55	\$14.20	\$7.07	\$2.45	\$0.00	\$23.72
3	60	\$15.49	\$7.07	\$2.45	\$0.00	\$25.01
4	65	\$16.78	\$7.07	\$2.45	\$0.00	\$26.30
5	70	\$18.07	\$7.07	\$7.05	\$0.00	\$32.19
6	75	\$19.36	\$7.07	\$7.05	\$0.00	\$33.48
7	80	\$20.65	\$7.07	\$7.05	\$0.00	\$34.77
8	85	\$21.94	\$7.07	\$7.05	\$0.00	\$36.06
9	90	\$23.23	\$7.07	\$7.05	\$0.00	\$37.35

**Notes:**  
Steps are 4 mos.

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

SPECIALIZED EARTH MOVING EQUIP < 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.44	\$10.91	\$10.89	\$0.00	\$54.24
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.73	\$10.91	\$10.89	\$0.00	\$54.53
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 550 - (Section B) Zone 2</i>	03/01/2017	\$50.47	\$8.77	\$17.20	\$0.00	\$76.44

**Apprentice - SPRINKLER FITTER - Local 550 (Section B) Zone 2**

**Effective Date - 03/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$17.66	\$8.77	\$8.70	\$0.00	\$35.13
2	40	\$20.19	\$8.77	\$8.70	\$0.00	\$37.66
3	45	\$22.71	\$8.77	\$8.70	\$0.00	\$40.18
4	50	\$25.24	\$8.77	\$8.70	\$0.00	\$42.71
5	55	\$27.76	\$8.77	\$8.70	\$0.00	\$45.23
6	60	\$30.28	\$8.77	\$10.20	\$0.00	\$49.25
7	65	\$32.81	\$8.77	\$10.20	\$0.00	\$51.78
8	70	\$35.33	\$8.77	\$10.20	\$0.00	\$54.30
9	75	\$37.85	\$8.77	\$10.20	\$0.00	\$56.82
10	80	\$40.38	\$8.77	\$10.20	\$0.00	\$59.35

**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 <i>OPERATING ENGINEERS LOCAL 4</i>	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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN 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"						
TELECOMMUNICATION TECHNICIAN ELECTRICIANS LOCAL 103	03/01/2017	\$36.25	\$13.00	\$15.60	\$0.00	\$64.85
	09/01/2017	\$36.96	\$13.00	\$15.62	\$0.00	\$65.58
	03/01/2018	\$37.86	\$13.00	\$15.65	\$0.00	\$66.51
	09/01/2018	\$38.75	\$13.00	\$15.67	\$0.00	\$67.42
	03/01/2019	\$39.65	\$13.00	\$15.70	\$0.00	\$68.35

**Apprentice - TELECOMMUNICATION TECHNICIAN - Local 103**

**Effective Date - 03/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$14.50	\$13.00	\$0.44	\$0.00	\$27.94
2	40	\$14.50	\$13.00	\$0.44	\$0.00	\$27.94
3	45	\$16.31	\$13.00	\$12.54	\$0.00	\$41.85
4	45	\$16.31	\$13.00	\$12.54	\$0.00	\$41.85
5	50	\$18.13	\$13.00	\$12.81	\$0.00	\$43.94
6	55	\$19.94	\$13.00	\$13.09	\$0.00	\$46.03
7	60	\$21.75	\$13.00	\$13.37	\$0.00	\$48.12
8	65	\$23.56	\$13.00	\$13.65	\$0.00	\$50.21
9	70	\$25.38	\$13.00	\$13.93	\$0.00	\$52.31
10	75	\$27.19	\$13.00	\$14.21	\$0.00	\$54.40

**Effective Date - 09/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$14.78	\$13.00	\$0.44	\$0.00	\$28.22
2	40	\$14.78	\$13.00	\$0.44	\$0.00	\$28.22
3	45	\$16.63	\$13.00	\$12.55	\$0.00	\$42.18
4	45	\$16.63	\$13.00	\$12.55	\$0.00	\$42.18
5	50	\$18.48	\$13.00	\$12.82	\$0.00	\$44.30
6	55	\$20.33	\$13.00	\$13.10	\$0.00	\$46.43
7	60	\$22.18	\$13.00	\$13.39	\$0.00	\$48.57
8	65	\$24.02	\$13.00	\$13.66	\$0.00	\$50.68
9	70	\$25.87	\$13.00	\$13.95	\$0.00	\$52.82
10	75	\$27.72	\$13.00	\$14.22	\$0.00	\$54.94

**Notes:**

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

TERRAZZO FINISHERS BRICKLAYERS LOCAL 3 - MARBLE & TILE	02/01/2017	\$49.70	\$10.75	\$19.22	\$0.00	\$79.67
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**Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile**

**Effective Date - 02/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.85	\$10.75	\$19.22	\$0.00	\$54.82
2	60	\$29.82	\$10.75	\$19.22	\$0.00	\$59.79
3	70	\$34.79	\$10.75	\$19.22	\$0.00	\$64.76
4	80	\$39.76	\$10.75	\$19.22	\$0.00	\$69.73
5	90	\$44.73	\$10.75	\$19.22	\$0.00	\$74.70

**Notes:**

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

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2016	\$37.70	\$7.60	\$14.35	\$0.00	\$59.65
For apprentice rates see "Apprentice- LABORER"						
TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2016	\$36.42	\$7.60	\$14.35	\$0.00	\$58.37
For apprentice rates see "Apprentice- LABORER"						
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2016	\$36.30	\$7.60	\$14.35	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	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 <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$33.02	\$10.91	\$10.89	\$0.00	\$54.82
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2016	\$48.58	\$7.60	\$14.75	\$0.00	\$70.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2016	\$50.58	\$7.60	\$14.75	\$0.00	\$72.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2016	\$40.65	\$7.60	\$14.75	\$0.00	\$63.00
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2016	\$42.65	\$7.60	\$14.75	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.44	\$10.91	\$10.89	\$0.00	\$54.24

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
WAGON DRILL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2016	\$32.15	\$7.60	\$13.00	\$0.00	\$52.75
	06/01/2017	\$33.15	\$7.60	\$13.00	\$0.00	\$53.75
	12/01/2017	\$33.78	\$7.60	\$13.00	\$0.00	\$54.38
	06/01/2018	\$34.62	\$7.60	\$13.00	\$0.00	\$55.22
	12/01/2018	\$35.46	\$7.60	\$13.00	\$0.00	\$56.06
	06/01/2019	\$36.33	\$7.60	\$13.00	\$0.00	\$56.93
	12/01/2019	\$37.19	\$7.60	\$13.00	\$0.00	\$57.79
For apprentice rates see "Apprentice- LABORER"						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2016	\$45.38	\$10.00	\$15.25	\$0.00	\$70.63
	06/01/2017	\$46.38	\$10.00	\$15.25	\$0.00	\$71.63
	12/01/2017	\$47.38	\$10.00	\$15.25	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS &amp; GASFITTERS LOCAL 12 (Local 138)</i>	03/01/2017	\$48.61	\$11.32	\$15.46	\$0.00	\$75.39
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						

**Additional Apprentice Information:**

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

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

All steps are six months (1000 hours.)

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

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

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

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

**ATTACHMENT 5F**

AGREEMENT

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**AGREEMENT**

THIS AGREEMENT made this \_\_\_\_\_ day of \_\_\_\_\_ in the year Two Thousand and \_\_\_\_\_, between \_\_\_\_\_, with a usual place of business at \_\_\_\_\_, hereinafter called the CONTRACTOR, and the City of Newburyport, acting by its Department of Public Services, with a usual place of business at 16A Perry Way, Newburyport, MA 01950, hereinafter called the OWNER.

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

1. Scope of Work

The Contractor shall furnish all labor, materials, equipment, bonds and insurance necessary to perform all work required for the project known as the Plum Island Hydrant Replacement Project, in strict accordance with the Contract Documents and all related Drawings and Specifications. The said Documents, Specifications, Drawings and any supplemental general conditions are incorporated herein by reference and are made a part of this Agreement.

2. Contract Price

The Owner shall pay the Contractor for the performance of this Agreement, subject to additions and deductions provided herein, in current funds, the sum of \_\_\_\_\_.

3. Commencement and Completion of Work

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

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

C. Progress and Completion: Contractor shall commence work promptly upon execution of this Agreement and shall prosecute and complete the work regularly, diligently and uninterruptedly at such a rate of progress as will insure Substantial Completion within the stipulated number of calendar days.

4. Performance of the Work

A. Direction of the Work: The Contractor shall supervise and direct the Work, using his best skills and attention which shall not be less than such state of skill and attention generally rendered by the contracting profession for projects similar to the Project in scope, difficulty and location. The Contractor shall maintain adequate supervisory personnel at the project site during the performance of the Work. He shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Agreement.

B. Responsibility for the Work: (1) The Contractor shall be responsible to the Owner for the acts and omissions of his employees, Subcontractors and their agents and employees, and other persons performing any of the Work under a contract with the Contractor. This obligation shall also extend to the presence on the Site of suppliers of materials or equipment, their employees, contractors, and agents engaged in the work.

(2) The Contractor shall not be relieved from his obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of the Owner in its administration of the Agreement, or by inspections, tests or approvals required or performed by persons other than the Contractor.

C. Permits and Fees: Unless otherwise expressly provided, the Contractor shall secure and pay for all permits and fees, licenses and inspections necessary for the proper execution and completion of the Work which are customarily secured after execution of the Agreement and which are legally required at the time the bids are received, and the same shall at all times be the property of the Owner and shall be delivered to the Owner upon completion of the Project.

D. Notices, Compliance With Laws: (1) The Contractor shall give all notices and comply with all federal, state and local laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the performance of the Work. The Contractor shall provide the Owner with reproductions of all permits, licenses and receipts for any fees paid. The Owner represents that it has disclosed to the Contractor all orders and requirements known to the Owner of any public authority particular to this Agreement.

(2) If the Contractor observes that any of the Contract Documents are at variance with applicable laws, statutes, codes and regulations in any respect, he shall promptly notify the Owner in writing, and any necessary changes shall be accomplished by appropriate modification.

(3) If the Contractor performs any Work which he knows or should know is contrary to such laws, ordinances, rules and regulations, and without such notice to the Owner, he shall assume full responsibility therefor and shall bear all costs attributable thereto.

- (4) In the performance of the Work, the Contractor shall comply with all applicable federal, state and local laws and regulations including those relating to workplace and employee safety. The Contractor shall notify the Owner immediately of any conditions at the place of the work which violate said laws and regulations and shall take prompt action to correct and eliminate any such violations.
- E. **Project Superintendent:** The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site at all times during the progress of the Work. The superintendent shall represent the Contractor and all communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be so confirmed on written request in each case.
- F. **Progress Schedule:** The Contractor, immediately after being awarded the Contract, shall prepare and submit for the Owner's information an estimated progress schedule for the Work. The progress schedule shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.
- G. **Drawings, Specifications and Submittals:**
- (1) The Contractor shall maintain at the site for the Owner one record copy of all Drawings, Specifications, Addenda, Change Orders and other Modifications, and "As-Built" Drawings and Specifications in good order and marked currently to record all changes made during construction, and approved Shop Drawings, Product Data and Samples. These shall be delivered to the Owner upon completion of the Work.
  - (2) By approving and submitting Shop Drawings, Product Data and Samples, the Contractor represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto, or will do so, and that he has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.
  - (3) The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Owner's approval of Shop Drawings, Product Data or Samples unless the Contractor has specifically informed the Owner in writing of such deviation at the time of submission and the Owner has given written approval to the specific deviation. The Contractor shall not be relieved from responsibility for errors or omissions in the Shop Drawings, Product Data or Samples by the Owner's approval thereof.
  - (4) The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data or Samples, to revisions other than those requested by the Owner on previous submittals.
  - (5) No portion of the Work requiring submission of a Shop Drawing, Product Data or Sample shall be commenced until the submittal has been approved by the Owner. All such portions of the Work shall be in accordance with approved submittals.
- H. **Protection of the Work and Owner's Property:** The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this Agreement. He shall at all times safely guard and protect his own work, and that of adjacent property from damage. The Contractor shall replace or make

good any such damage, loss or injury. The Contractor shall clean the work area and restore it to its original condition upon completion of the work.

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

5. Affirmative Action/Equal Employment Opportunity

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

6. Site Information Not Guaranteed; Contractor's Investigation

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

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

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



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

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

7. Project Architect or Engineer

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

8. Wage Rates

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

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

9. Payments to the Contractor

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

- A. The work performed during the preceding month.
- B. The materials not incorporated in the Work but delivered and suitably stored at the site (or at some location agreed upon in writing) to which the Contractor has title, or to which a Subcontractor has title and has authorized the Contractor to transfer title to the Owner.

- C. Less the following retention items:
1. A retention based on an estimate of the fair value of the Owner's claims against the Contractor.
  2. A retention for direct payments to Subcontractors, if any, based on demands for same in accordance with the provisions of Section 39F of Chapter 30 of the General Laws.
  3. A retention not exceeding five percent (5%) of the approved amount of the periodic payment.
- D. After the receipt of a periodic estimate requesting final payment and within sixty-five (65) days after the Contractor fully completes the Work, or substantially completes the Work so that the value of the Work remaining to be done is, on the estimate of the Owner, less than 1% of the original Contract Price, or substantially completes the Work and the Owner takes possession or occupancy, whichever occurs first, the Owner shall pay the Contractor the entire balance due on the Contract less:
1. A retention based on an estimate of the fair value of the Owner's claims against the Contractor and of the cost of completing the incomplete and unsatisfactory items of work.
  2. A retention for direct payments to Subcontractors, if any, based on demands of same in accordance with the provisions of Section 39F of Chapter 30 of the General Laws, or based on the record of payments by the Contractor to the Subcontractors under this Contract if such record of payment indicates that the Contractor has not paid Subcontractors as provided in Section 39F of Chapter 30 of the General Laws.

If the Owner fails to make payment as herein provided, there shall be added to each such payment, daily interest at the rate of 3 percentage points above the rediscount rate than charged by the Federal Reserve Bank of Boston, commencing on the first day after said payment is due, and continuing until the payment is delivered or mailed to the Contractor; provided that no interest shall be due, in any event, on the amount of a periodic estimate for final payment until fifteen (15) days after receipt of such a periodic estimate by the Owner as provided in the first paragraph of this Article. The Contractor agrees to pay to each subcontractor a portion of any such interest paid in accordance with the amount due each subcontractor.

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

- E. Changes in the Work: No changes in the work covered by the approved Contract Documents shall be made without prior written approval of the Owner. Charges or credits for the work covered by the approved change shall be determined by one or more, or a combination of the following methods:
- (a) Unit bid prices previously approved.
  - (b) An agreed lump sum.
  - (c) The actual cost of:
    - (1) Labor.
    - (2) Materials entering permanently into the work.
    - (3) The ownership or rental cost of construction equipment during the time of use on the extra work.
    - (4) Power and consumable supplies for the operation of power equipment.
    - (5) Wages to be paid.

To the cost under (c) there shall be added a fixed fee to be agreed upon but not to exceed ten percent (10%) of the actual cost of work. The fee shall be compensation to cover the cost of supervision, overhead, bond, profit and any other general expenses.

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

The Contractor hereby agrees that the Contractor shall have no claim for damages of any kind against the City on account of any delay in the commencement or performance of the work and/or any hindrance, delay or suspension of any portion of the work including, but not limited to, any claims or damages on account of having to perform out of sequence work, claims for damages on account of loss of production or other interference with the work whether such delay is caused by the City or otherwise, except as and to the extent expressly provided under G.L. c.30, §39O in the case of written orders by the City. The Contractor acknowledges that the Contractor's sole remedy for any such claim will be an extension of time as provided herein.

#### 10. Final Payment, Effect

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

## 11. Contract Documents

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

- Modifications
- This Contract Form
- Addenda
- Invitation to Bid and Instructions to Bidders
- Specifications
- Drawings
- Bid Form
- Performance Bond
- Labor & Materials Payment Bond
- Non-Collusion Certificate
- Tax Compliance Certificate
- Clerk's Certificate of Corporate Vote
- Certificate of Insurance
- Schedule of Prevailing Wages

In case of any conflict among the Contract Documents, the Contractor shall provide the greater quality or quantity to the City, otherwise the order of precedence shall be in the same order set forth above.

## 12. Terms Required By Law

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

## 13. Indemnification

The Contractor shall indemnify and hold harmless the Owner from and against any and all claims, damages, losses, and expenses, including attorney's fees, arising out of the performance of this Agreement when such claims, damages, losses, and expenses are caused, in whole or in part, by the acts, errors, or omissions of the Contractor or his employees, agents, subcontractors or representatives.

## 14. Insurance

The Contractor shall purchase and maintain such insurance as will protect both the Owner and the Contractor from claims which may arise under the Agreement, including operations performed for the named insured by independent contractors and general inspection thereof by the named insured. In addition, the Contractor shall require its subcontractors to maintain such insurance. Coverage shall be provided for:

- .1 claims under workers' or workmen's compensation, disability benefit and other applicable 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 usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor, or (2) by any other person;
- .5 claims for damages, including damages to the Work itself, because of injury to or destruction of tangible property, 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.
- .7 claims involving contractual liability applicable to the Contractor's obligations under Article 13.

The limits of liability for coverage required under the preceding paragraph shall be as Specified in the Supplemental Conditions.

Except for Workmen's Compensation, all liability coverage shall name the City as an additional insured and shall provide for 30 days prior written notice to the City of any modification or termination of coverage provided thereby. The Contractor shall provide the Owner with appropriate certificate(s) of insurance evidencing compliance with this provision prior to the commencement of any work under this Agreement.

#### 15. Notice

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

#### 16. Termination

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

17. Miscellaneous

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

[Remainder of page intentionally blank.]

AGREED:

**CITY OF NEWBURYPORT, MASSACHUSETTS**  
(Owner)

By its \_\_\_\_\_

\_\_\_\_\_

**CONTRACTOR:** \_\_\_\_\_

By \_\_\_\_\_

\_\_\_\_\_

(Name)

\_\_\_\_\_

(Title)

\_\_\_\_\_

(Address)

\_\_\_\_\_

(City and State)

Approved as to Form:

By \_\_\_\_\_

(Owner's Counsel)

In accordance with G.L. c.44, Section 31C, this is to certify that an appropriation in the amount of this contract is available therefor and that the \_\_\_\_\_ has been authorized to execute the contract and approve all requisitions and change orders.

By \_\_\_\_\_

(Owner's Accountant)

\_\_\_\_\_

(Name)