TOWN OF BURLINGTON
DEPARTMENT OF PUBLIC WORKS

Adams Street Water Main –
2020
19C-411-0042 (7382)

Department of Public Works
25 Center Street
Burlington MA 01803

July 30, 2020
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Adams Street Water Main – 2020  
19C-411-0042 (7382)  
Thursday, July 30, 2020 at 10:00 A.M.
INVITATION FOR BID

PUBLIC WORKS CONSTRUCTION

Sealed bids for Adams Street Water Main must be received by Department of Public Works, Town Hall Annex, 25 Center Street, Burlington, Massachusetts, 01803 until Thursday, July 30, 2020 at 10:00 A.M. and will be publicly opened and read aloud at such time.

- Specifications and bid forms are available on the DPW website site at: http://www.burlington.org, under the Projects & Programs tab.

- Specifications and bid forms may be obtained at the Department of Public Works, Town Hall Annex, 25 Center Street, Burlington, Massachusetts, 01803 after July 16, 2020 between 8:30 AM and 4:00 PM for a fifty ($50.00) dollar reproduction cost.

- A bid bond of five (5) percent is required.

- Successful bidder must provide 100% Payment and Performance bonds.

- This project is bid according to MGL 30-39M.

- Town’s Designated Representative and point of contact for questions is: Stephen Hildreth, P.E., Email: shildreth@burlington.org, Phone: (781) 270-1643

- Prevailing wage must be paid per MGL 149 SECT. 26-27D
PROJECT DESCRIPTION

The work under this contract will include all equipment, labor, material, supplies, etc. necessary to furnish the work described in this contract.

The project consists of the construction of a new twenty four (24) inch water main, from a new connection point in intersection of Adams Street and North Street in Lexington, passing through Lexington/Burlington Town Line, down Adams Street to Middlesex Turnpike.

Starting at the intersection of Adams Street and North Street in Lexington, MA, a connection will be made to the existing twelve (12) inch water main. A short length of twelve (12) inch water main, including a new twelve (12) inch gate will be installed. Continuing to the northeast, the new twelve (12) inch line will increase in size to a twenty four (24) inch water main, with a new twenty four (24) inch by twenty four (24) inch tee facing east down North Street, allowing for a future connection. From the point of transition, approximately 725 feet of twenty four (24) inch water main will be installed to the Lexington/Burlington Town Line. Connections will be made to existing water mains on Myrna Road, all domestic services, and existing hydrants replaced.

Once the newly proposed water main passes the town line, a new twenty four (24) inch gate will be installed, followed by approximately another 150 feet of twenty four (24) inch water main, which will reduce down to sixteen (16) inch main, with a new sixteen (16) inch by sixteen (16) inch tee installed, with a sixteen (16) inch gate valve, with a full length of sixteen (16) inch pipe and mechanical capped end, with a thrust block, allowing for a future connection. Once through the sixteen (16) inch by sixteen (16) inch tee, the main will reduce down to twelve (12) inch, and have a twelve (12) inch gate installed, pass through a bypass meter, located in a manhole as depicted upon the plan set, and continue to the northeast out of the manhole, where another twelve (12) inch gate will be installed, and the main will increase in size back to sixteen (16) inch, and another sixteen (16) inch by sixteen (16) inch tee, gate, full length of pipe, mechanical cap, and thrust block will be installed allowing for another future connection. Then continuing to the northeast, the main will increase back in size to twenty four (24) inch and proceed down Adams Street and connect into the existing ten (10) inch water main in Middlesex Turnpike.

As the main passes by existing water main connections for side streets, business, etc., all connections will be made as called out on the plan set.

This project is subject to two (2) separate Order of Conditions, the first from the Town of Lexington and the second from the Town of Burlington. Both of which are available in the Appendices of this contract.

Adams Street Water Main – 2020
19C-411-004 (7382)
Thursday, July 30, 2020 at 10:00 A.M.
INSTRUCTIONS TO BIDDERS

Receipt and Opening of Bids
The Town of Burlington, Massachusetts, herein called the Owner, acting by and through its Department of Public Works, will receive sealed bids as specified in the invitation for Bids at which time bids will be publicly opened and read.

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

Location and Work to be Done
The Location of the Work to be done is described in the project description.

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

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

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

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his address, and endorsed with the name of the project as specified in Receipt and Opening of Bids.

If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified in Receipt and Opening of Bids.

The following sections need to be filled out and completed as part of the bid package;
- Form of General Bid
- Acknowledgement of Addenda, if any
- Bid Form
- Total Bid Price
- Contractor Reference
- Contractor Certification

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Thursday, July 30, 2020 at 10:00 A.M.
Bid Opening Procedure

The following list of requirements will apply to each filed bid. Bids not meeting all the requirements for timeliness and security will be rejected without opening; bids not meeting signature and addenda requirements will be rejected prior to checking of bid amounts.

Bids will be filed at the place and before the time specified in Receipt and Opening of Bids.

Properly executed bid security will be placed in a sealed envelope and will be attached to the outside of the envelope containing the bid.

Bid signatures will be checked.

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

Ability and Experience of Bidder

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

Bidder must have a minimum of five (5) years’ experience and have completed satisfactorily five (5) jobs within that time of similar size and scope.

All Subcontractors must have a minimum of five (5) years’ experience and have completed satisfactorily five (5) jobs within that time of similar size and scope.

The Contractor must submit with his bid proposal a list of five (5) jobs which he has successfully completed, giving the name and the address of these projects so they can be investigated prior to the award of the contract.

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

Addenda and Interpretations

No interpretation of the bid documents will be made orally. Every request for such interpretation should be in writing addressed to the Town’s Designated Representative listed in INVITATION TO BID and to be given consideration must be received at least seven (7) days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the Contract Documents. Failure of any bidder to receive any such addendum or interpretation will not relieve such bidder from any obligation under this bid as submitted. All addenda so issued will become part of the Contract Documents.

Laws and Regulations

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

Bid Security

Each bid must be accompanied by a BID BOND, CASH, or, CERTIFIED CHECK, payable to the Town, in the amount stated in INVITATION FOR BID. Such checks will be returned to all except the three (3) lowest responsible and eligible bidders within five (5) days, Saturday, Sundays, and legal holidays excluded, after the opening of bids, and the remaining checks will be returned promptly after the Owner and the accepted bidder have executed the Contract, or if no notice of intent to award has been presented to the selected contractor within thirty (30) days, Saturdays, Sundays and holidays excluded, after the date of the opening of bids, upon demand of the bidder at any time thereafter.

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

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Right to Reject Bid
The Owner reserves the right to waive any informality or reject any and all bids and alternate bids, should the Owner deem it to be in the public interest to do so.

The Owner also reserves the right to reject the bid of any bidder that the Owner considers to be unqualified based on the criteria set forth herein.

Time for Completion
The bidder must agree to commence work and to fully complete the project within the time limit stated in SPECIAL CONDITIONS.

Comparison of Bids
In the event that there is a discrepancy in FORM OF GENERAL BID between the lump sum or unit prices written in words and figures, the prices written in words will govern.

Rule for Award of Contract
The Contract will be awarded to “the lowest responsible and eligible bidder” for the Total Price Bid pursuant to General Laws Chapter 30, Section 39M, as amended. Such a bidder will possess the skill ability and integrity necessary for the faithful performance of the work, will 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 will otherwise comply with all applicable provisions of law. Bidder will execute formal agreement within ten (10) days of the Notice of Award.

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

Wage Rates
Prevailing Wage Rates as determined by the Commissioner of Department of Labor and Industries 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 contractor, before bid opening to request if necessary, any additional information on Prevailing Wage Rates for those trades people who may be employed for the proposed work under this contract.

State schedules of Prevailing Wage Rates are included in the contract documents.

Specifications
All specifications and bid items are based on Massachusetts Highway Departments “Standard Specifications for Highway & Bridges” edition as revised in the 1995 Publication.

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Bid Items Not Guaranteed
The successful bidder is not guaranteed all items or the total bid price under this contract. Bidders must understand that like items may be bid under other contracts specifically packaged as one complete project. The successful bidder has no right to similar items bid under other projects. The Owner will specify where and when this contract will be applied to undertake a particular improvement.

Liquid Asphalt Adjustment
Per MGL 30-38A paving or Hot Mix Asphalt items bid under this contract (if any) as subject to liquid asphalt price adjustment.

Tie Bids
In the event of tied bids, wherein two or more responsive and responsible vendors provide the same bid price a coin toss will be used to break the tie.

Unforeseen Office Closure
If, at the time of the scheduled bid opening, Town Offices are closed due to uncontrolled events, the bid opening will be postponed until the next normal business day at the original time specified in the documents. Bids will be accepted until that date and time.

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FORM OF GENERAL BID

Bid of ____________________________________ (hereinafter called "Bidder")*

(____) a corporation, organized and existing under the laws of the state of ___________.

(____) a partnership

(____) a joint venture

(____) an individual doing business as ___________________________________

To the Town of Burlington, Massachusetts (hereinafter called “Owner”).

Gentlemen:

The bidder, in compliance with your invitation for bid, examined the Contract Documents and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby propose to furnish all labor, materials, and supplies, and to construct the project in accordance with the Contract Documents within the time set forth in the agreement, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, or which this proposal is a part.

*Insert corporation, partnership or individual as applicable.
ADDENDA

Bidder acknowledges receipt of the following addenda:

No.______________________ Dated:______________________

No.______________________ Dated:______________________

No.______________________ Dated:______________________

No.______________________ Dated:______________________

No.______________________ Dated:______________________
### BID FORM

<table>
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<tr>
<th>Items</th>
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<th>Unit</th>
<th>Unit Price</th>
<th>Per</th>
<th>Total Price</th>
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<td>2,300</td>
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<td><strong>Item 2</strong>&lt;br&gt;16” Zinc Coated Cement&lt;br&gt;Lined Ductile Iron Pipe&lt;br&gt;– Class 52 Push On&lt;br&gt;Gasket Joint</td>
<td>140</td>
<td>LF</td>
<td>$_____________ /LF</td>
<td>$ ____________</td>
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<td><strong>Item 3</strong>&lt;br&gt;12” Zinc Coated Cement&lt;br&gt;Lined Ductile Iron Pipe&lt;br&gt;– Class 52 Push On&lt;br&gt;Gasket Joint</td>
<td>100</td>
<td>LF</td>
<td>$_____________ /LF</td>
<td>$ ____________</td>
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<td>20</td>
<td>LF</td>
<td>$_____________ /LF</td>
<td>$ ____________</td>
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<tr>
<td><strong>Item 5</strong>&lt;br&gt;8” Zinc Coated Cement&lt;br&gt;Lined Ductile Iron Pipe&lt;br&gt;– Class 52 Push On&lt;br&gt;Gasket Joint</td>
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<td>$_____________ /LF</td>
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<td>$ ____________ /LF</td>
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<td>Item 9</td>
<td>1” Type K Copper Tubing</td>
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<td>$ ____________ /LF</td>
<td>$ ____________</td>
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<td>2” Type K Copper Tubing</td>
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<td>$ ____________ /LF</td>
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<td>6” Temporary Water Main</td>
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<td>$ ____________ /LF</td>
<td>$ ____________</td>
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<td>$ ____________ /LF</td>
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<td>$ ____________ /LF</td>
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<td>$ ____________ /EA</td>
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<td>$ ____________ /EA</td>
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<td>Item 16</td>
<td>24” x 8” Tee with Thrust Block</td>
<td>6</td>
<td>EA</td>
<td>$_________</td>
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<td>Item 18</td>
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<td>Item 24</td>
<td>6” Gate Valve and Box</td>
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<td>EA</td>
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<td>Item 25</td>
<td>24” x 16” Reducer</td>
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<td>1</td>
<td>EA</td>
<td>$_________</td>
<td>$_________</td>
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<td>16” x 12” Reducer</td>
<td>2</td>
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Adams Street Water Main – 2020
19C-411-0042 (7382)
Thursday, July 30, 2020 at 10:00 A.M.
<table>
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<th>Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Amount</th>
<th>Amount / Unit</th>
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<td>38</td>
<td>24” Field Lok Gaskets</td>
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<td>39</td>
<td>24” Bend (11.25 degree through 90 degree) with Thrust Block</td>
<td>9</td>
<td>EA</td>
<td>$________</td>
<td>$________</td>
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<td>12” Bend (11.25 degree through 90 degree) with Thrust Block</td>
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<td>EA</td>
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<td>Item</td>
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<td>41</td>
<td>10” Bend (11.25 degree through 90 degree) with Thrust Block</td>
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<td>Sand Borrow</td>
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<td>¾” Crushed Stone</td>
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<td>68</td>
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<td>69</td>
<td>Superpave Intermediate Course – 19.0 mm – Finish Paving</td>
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<td>70</td>
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<td>72</td>
<td>Loam and Hydro Seed</td>
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<td>$ ____________</td>
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<td>$ ____________/LF</td>
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<td>Clearing and Grubbing</td>
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<td>SY</td>
<td>$ ____________/SY</td>
<td>$ ____________</td>
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<td>80</td>
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<td>$ ____________</td>
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<td>Rate per Unit</td>
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<td>Hay Bales and Silt Fence</td>
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<td>$ ___________ /LF</td>
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<td>Removal and Disposal of Contaminated Soil</td>
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<td>72” Diameter Manhole Base</td>
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<td>87</td>
<td>72” Diameter Manhole Top with Center Opening</td>
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<td>$ ___________</td>
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<td>48” Diameter Sewer Manhole - Base</td>
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<td>Quantity</td>
<td>Unit</td>
<td>Price/Unit</td>
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<tr>
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<td>Frame and Grate (or Cover) Removed and Disposed</td>
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<td>12” Krohne Waterflux 3070 Water Meter</td>
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<td>$ ___________</td>
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<td>8” P.V.C. – SDR-35 Sewer Pipe</td>
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<td>LF</td>
<td>$ ___________ /LF</td>
<td>$ ___________</td>
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TOTAL BID PRICE

Total Price Bid: $ ________________________________

Bid Price in Words: ________________________________________

Name: ______________________________________________________

Signature: ____________________________________________________

Title: _________________________________________________________

Company: _____________________________________________________

Address: _____________________________________________________

Phone: _______________________________________________________

This is an unofficial Bid Spec. If this document is used to submit a bid then you must email your contact information to Engineering@burlington.org in order to be added to the bidders list.
CONTRACTOR REFERENCES

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

1. Have been in business under present name for ___ years.

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

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________ ________________________________

(Attach supplementary list if necessary)

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

<table>
<thead>
<tr>
<th>#</th>
<th>Completion Date</th>
<th>Project Name</th>
<th>Contract Amount</th>
<th>Reference Name</th>
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<td>5</td>
<td></td>
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</table>

4. Bank reference ________________________________
   (Name)
   ________________________________
   (Bank)
   ________________________________
   (Address) (Telephone No.)

Adams Street Water Main – 2020
19C-411-0042 (7382)
Thursday, July 30, 2020 at 10:00 A.M.
CONTRACTOR CERTIFICATION

NON-COLLUSION

I certify under penalties of perjury that this bid or proposal has been made and submitted under good faith and without collusion or fraud with any other person. As used in this certification, the word “person” means any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

TAX COMPLIANCE

Pursuant to Massachusetts General Law Chapter 62C, Section 49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

LABOR HARMONY / OSHA 10-HOUR

I will furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work, and 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.

Signature: _____________________________________________________________

(Person Signing Bid)

___________________________________________________________________

(Name of Business)
AGREEMENT

THIS AGREEMENT, by and between the party of the first part, the Town of Burlington, hereinafter called “OWNER”, acting herein through its Town Administrator, and the party of the second part hereinafter called “CONTRACTOR”.

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the OWNER, the CONTRACTOR hereby agrees with the OWNER to commence and complete the project described by these bid documents hereinafter called the project, for the sum of the contract price and all extra work in connection therewith, under the terms as stated in the Contract Documents; and at his (its and their) own proper cost and expense to furnish all the materials, supplies, machinery equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in FORM OF GENERAL BID, GENERAL CONDITIONS, Contract Documents as prepared by the Owner.

IN WITNESS WHEREOF, the parties to these presents have executed this contract.

$ Contract Price

AGREED:
Town of Burlington

Owner Date

Contractor

Contractor Date

Company Name: ____________________________________________
Address: __________________________________________________

In accordance with M.G.L. C. 44, Section 31C, this is to certify that an appropriation in the amount of this contract is available therefore and that the Town Administrator has been authorized to execute the contract and approve all requisitions and change orders.

Account # Town Accountant Date

Adams Street Water Main – 2020
19C-411-0042 (7382)
Thursday, July 30, 2020 at 10:00 A.M.
SPECIAL CONDITIONS

1. All work under this contract must comply with the most recent edition of the Town of Burlington Department of Public Works; Street Opening/Utility Connection Rules & Regulations.

2. Prior to the commencement of any work the Contractor must obtain a Street Opening permit from the DPW/Engineering Division.

3. Unless otherwise specified, the cost of the Police Detail Officer(s) will be paid for by the Town of Burlington. If the details are not properly canceled by the Contractor in time, then the Contractor will be back charged for any charges occurred for any police details.

4. At the end of each week the Contractor must submit an itemized summary/quantities list of items completed during the week. These quantities will be reviewed with the Town’s Designated Representative before the end of the day on Friday.

5. After installation of new gate boxes and structures, or adjustment of existing gate boxes and structures, all construction debris will be removed providing easy access if need arises. All work and labor needed to furnish and remove the construction debris out of the gate boxes and structures will be considered incidental.

6. All certified payroll slips must be submitted as part of the pay requisition package for each individual pay requisition request, for each contractor and sub-contractor that has performed work under this contract, up to date of the current pay requisition before the pay requisition will be processed and paid.

7. The Contractor shall have a designated Project Manager, or a designated Foreman, in the field at all times while the work is taking place. The Project Manager or designated Foreman shall have the authority to agree on quantities and items with the Engineer, and have decision making on behalf of the Contractor. This person shall also be responsible for the location/relocation of all traffic signs and traffic control devices, as directed by the Engineer.

8. Under this contract the Contractor agrees to complete “Punch List of Items” assembled by the Engineer. This work includes driveway apron adjustments or patching, as necessary, loam and seeding, and structure adjustment, included but not limited to the various roads impacted by this contract. The “Punch List of Items” must be completed before the final payment requisition is processed. All the items will be paid for under the appropriate bid item under this contract.
9. The awarded contractor **MUST** submit proof of completion for every employee that may come in contact with Asbestos Cement Pipe during the project, has completed the required “8 Hour OSHA II Asbestos Training: Asbestos Cement Pipe (ACP) Worker Safety” safety course, per MassDEP asbestos regulation, 310 CMR 7.15. Asbestos cement pipe is expected to be encountered during this job.

10. This contract is subject to two (2) different orders of conditions, one (1) in each town. A copy of the each order for each town is attached to this contract. Part of both order of conditions is that all paved roadway surfaces and lose piles, will be swept and cleaned at the end of **EVERY** day.

11. On the Plan Set, is shown two (2) proposed sixteen (16) inch by sixteen (16) inch tees leading to a future building. At the time of this bid, the exact location of the future building is unknown, but will be located close to the vicinity as called out upon the Plan Set. The location of the tees leading to the future building, might relocated in the future to accommodate the building location. The proposed meter pit and twelve (12) inch gates should remain unchanged.

12. Traffic Management under this contract must be considered at all times meaning the following points apply:

- Two (2) way traffic must be maintained at all times
- Complete compliance with the Traffic Management Plan standards set forth in the **Town of Burlington Department of Public Works Street Opening/Utility Connections Rules & Regulations**
- Detours not included as part of the Traffic Management Plan will be allowed only upon written authorization from the Owner and the Contractor is responsible for supplying all necessary sign(s) and traffic barrels to which to attach the signs, for the detour.
- Contractor is also responsible for carrying twenty five (25) separate traffic barrels to barricade the end of any side roads to prevent traffic from damaging the new road surface.
13. Attention is directed to the following parts of the contract:

<table>
<thead>
<tr>
<th>Description</th>
<th>Location in Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation of Bid</td>
<td>Instructions Bidders</td>
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<tr>
<td>Experience of Bidders</td>
<td>Instructions to Bidders</td>
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<tr>
<td>Bid Security</td>
<td>Instructions to Bidders</td>
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<tr>
<td>Execution, Correlation and Intent</td>
<td>General Conditions; Article 1</td>
</tr>
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<td>Contract Administration</td>
<td>General Conditions; Article 2</td>
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<td>Superintendent</td>
<td>General Conditions; Article 4, Section 8</td>
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<td>Project/Progress Schedule</td>
<td>General Conditions; Article 4, Section 9</td>
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<td>Liquidated Damages</td>
<td>General Conditions; Article 6</td>
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<tr>
<td>Project Plans</td>
<td>Appendix B</td>
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<td>Prevailing Wage Rates</td>
<td>Appendix C</td>
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14. Summary Table of Important Contract Dates

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<td>Commencement of Work No Later Than</td>
<td>9/3/2020</td>
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<tr>
<td>Completion of Work No Later Than</td>
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<tr>
<td>Liquidated Damages Starting</td>
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</table>
GENERAL CONDITIONS

ARTICLE 1

CONTRACT DOCUMENTS

1.1 DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS
The Contract Documents consist of the Owner-Contractor Agreement, the Conditions of the Contract (General, and other Conditions), the Drawings, the Specifications, all Addenda issued prior to and all Change Orders issued after execution of the Contract, and all applicable laws, ordinances and regulations. The Contract Documents include Bidding Documents such as the Advertisement or Invitation for Bid, the Instructions to Bidders, sample forms, the Contractor’s Bid or portions of Addenda relating to any of these, or any other documents, specifically enumerated in the Owner-Contractor Agreement.

1.1.2 THE CONTRACT
The Contract Documents form the Contract for Construction. This Contract represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a written Change Order.

1.1.3 THE WORK
The Work comprises the completed construction required by the Contract Documents and includes all labor necessary to produce such construction, and all materials and equipment incorporated in such construction.

1.1.4 THE PROJECT
The project is the total construction of which the Work performed under the Contract Documents may be the whole or a part.

1.1.5 OR EQUAL
The use of the words “Or Equal” following the name of any manufacturer, vendor or proprietary product will be understood to mean that articles or materials may be substituted which, in the opinion of the Owner, are equal in quality, durability, appearance, strength, design and performance to the articles or materials named or described and will perform adequately in providing a first-class facility. When submitting shop drawing information on articles or materials which are being proposed as substitutes for specified items, the Contractor must clearly identify them as such. If the articles or materials are accepted as equal to those on which dimensions on the drawings are based, any dimensional variance from those shown and/or specified must be shown on the shop drawings prepared by the Contractor, illustrating the manner in which conformity to dimensions and design is to be obtained. All such drawings will

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be subject to the approval of the Owner and the installation of the article will not proceed without first obtaining said approval.

1.2 EXECUTION, CORRELATION AND INTENT

1.2.1 By executing the Contract, the Contractor represents that he has visited the site, familiarized himself with the local conditions under which the Work is to be performed, and correlated his observations with the requirements of the Contract Documents.

1.2.2 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work. The Contract Documents are complementary, and what is required by any one will be as binding as if required by all. Work not covered in the Contract Documents will not be required unless it is consistent therewith and is reasonably inferable there from as being necessary to produce the intended results. Words and abbreviations which have well-known technical or trade meanings are used in the Contract Documents in accordance which such recognized meanings.

1.2.3 The Notice to Proceed will come in the form of a written letter to the Contractor. Once the written Notice to Proceed has been received by the Contractor, that date will be the legal start date for work under the Contract.

In the event of a failure to issue a Notice to Proceed written document specifying the commencement date, the pre-construction meeting date will serve as the Notice to Proceed date.

1.3 OWNERSHIP AND USE OF DOCUMENTS

1.3.1 All Drawings, Specifications and copies thereof furnished by the Owner are and will remain the Owner’s property. They are to be used only with respect to this Project and are not to be used on any other project without prior written consent of the Owner. With the exception of one contract set for each party to the Contract, such documents are to be returned or suitably accounted for to the Owner at the completion of the Work. Submission or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of any reserved rights.
ARTICLE 2
ADMINISTRATION

2.1 ADMINISTRATION OF THE CONTRACT

2.1.1 The Owner or its Designated Representative will visit the site at intervals appropriate to the stage of construction to familiarize himself generally with the progress and quality of the Work and to determine in general if the Work is proceeding in accordance with the Contract Documents. However, the Owner’s Designated Representative will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work.

2.1.2 The Owner will at all times have access to the Work whenever it is in preparation and progress. The Contractor must provide facilities for such access so the Owner may perform its functions under the Contract Documents.

2.1.3 The Owner will make payments for completed work, as approved by the Owner, in accordance with M.G.L. Ch. 30, Sec. 39G. A five percent retainage will be deducted from periodic payments to the Contractor.

2.1.4 The Owner will render information necessary for the proper execution or progress of the Work within twenty (20) days of any request by the contractor or in accordance with any time limit agreed upon.

2.1.5 The Owner will have authority to reject Work which does not conform to the Contract Documents. Whenever, in his opinion, he considers it necessary or advisable for the implementation of the intent of the Contract Documents, he will have authority to require special inspection or testing of the Work whether or not such Work is then fabricated, installed or completed. Any such rejection of work will not relieve the Contractor of the responsibility for maintaining protection of the Work and the Owner’s property.

2.1.6 The Owner or its Designated Representative will review and approve or take other appropriate action upon Contractor’s submittals such as Shop Drawings, Product Data and Samples, but only for conformance with the design concept of the Work and with the information given in the Contract Documents. Such action will be taken with reasonable promptness so as to cause no delay. The Owner’s approval of a specific item will not indicate approval of an assembly of which the item is a component.

2.1.7
The Owner will conduct inspections to determine the date of Substantial Completion and Final Completion, will review written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment.
ARTICLE 3

OWNER

3.1 DEFINITION

3.1.1 The Owner is the person or entity identified as such in the Owner-Contractor Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Owner means the Town of Burlington or its designated representative.

3.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

3.2.1 The Owner will, at the time of execution of the Agreement and any subsequent Change Orders, certify for the Contractor that financial arrangements have been made to fulfill the Owner’s obligations under the Contract.

3.2.2 The Owner will furnish all documents describing the work.

3.2.3 Except as provided in Subparagraph 4.7.1, Owner will secure and pay for necessary approvals, easements, assessments and charges required for the construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

3.2.4 Information or services under the Owner’s control will be furnished by the Owner with reasonable promptness to avoid delay in the orderly progress of the Work.

3.2.5 The Owner will furnish the Contractor with three (3) copies of all Drawings and Specifications and revisions issued during the progress of the Work; all additional copies will be furnished upon request at the cost of reproduction.

3.2.6 The Owner, through its Designated Represented, will forward all instructions directly to the Contractor.

3.3 OWNER’S RIGHT TO STOP THE WORK

3.3.1 If the Contractor fails to correct defective Work as required by the Owner or fails to carry out the Work in accordance with the Contract Documents or if the Owner will for any
other reason so require, the Owner, by a written order signed personally or by an agent specifically so empowered by the Owner in writing, may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated or until further written notice from the Owner; however, this right of the Owner to stop the Work will not give rise to any duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity. The Contractor must resume the Work after such stoppage promptly upon written notice to do so from the Owner. If such stoppage is required through no fault of the Contractor, the Contract Time (and the dates for achieving Substantial Completion and Final Completion) will be extended by a period equal to the period of the stoppage, and the Contractor will be compensated for its reasonable and justifiable cost incurred as a result of such stoppage.

3.4 OWNER’S RIGHT TO CARRY OUT THE WORK

3.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within seven days after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to any other remedy he may have, perform such work or cause such work to be performed and/or make good such deficiencies. In such case an appropriate Change Order will be issued deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for additional services made necessary by such default, neglect or failure. If the payments then or thereafter due the Contractor are not sufficient to cover the amount, the Contractor must pay the difference to the Owner.

3.5 OWNER’S RIGHT TO TERMINATE CONTRACT

3.5.1 The Town reserves the right to terminate this Contract at their discretion with thirty (30) days written notice to the contractor. In the event of Contract termination, all finished or unfinished work, or un-used material, already paid for under Contract prices, will become the property of the Town of Burlington.
ARTICLE 4

CONTRACTOR

4.1 DEFINITION

4.1.1 The Contractor is the person or entity identified as such in the Owner-Contractor Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Contractor means the Contractor or his authorized representative.

4.2 REVIEW OF CONTRACT DOCUMENTS

4.2.1 The Contractor must carefully study and compare the Contract Documents and must at once report to the Owner any error, inconsistency or omission he may discover. The Contractor will not be liable to the Owner for any damage resulting from errors, inconsistencies or omissions in the Contract Documents which he discovers but will be liable for damage to the extent he reasonably should have but failed to discover such errors, inconsistencies or omissions. The Contractor will perform no portion of the Work at any time without Contract Documents or, where required, approved Shop Drawings, Product Data or Samples for such portion of the Work.

4.3 SUPERVISION AND CONSTRUCTION PROCEDURES

4.3.1 The Contractor must supervise and direct the Work, using his best skill and attention which will 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 must maintain adequate supervisory personnel at the Site during the performance of the Work. He will be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract.

4.3.2 The Contractor will 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 will also extend to the presence on the Site of suppliers of materials or equipment, their employees, contractors, and agents engaged in the work.

4.3.3 The Contractor will 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 Contract.
4.4 LABOR AND MATERIALS

4.4.1 Unless otherwise provided in the Contract Documents, the Contractor will provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and service necessary for the proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

4.4.2 The Contractor will at all times enforce strict discipline and good order among his employees and will not employ on the Work any unfit person or anyone not skilled in the task assigned to him including all persons on the Site controlled directly or indirectly by the Contractor.

4.5 WARRANTY

4.5.1 The Contractor warrants to the Owner that all materials and equipment furnished under this Contract will be new and of recent manufacture unless otherwise permitted in writing by the Owner and that all Work will be of good quality, free from faults and defects and in conformance with the Contract Documents. All Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective and, promptly after written notification of non-conformance, will be repaired or replaced by the Contractor with Work conforming to such requirements. If required by the Owner, the Contractor will furnish satisfactory evidence as to the kind and quality of materials and equipment.

4.6 TAXES

4.6.1 The Contractor will pay all applicable sales, consumer, use and other similar taxes for the Work or portion thereof provided by the Contractor which are legally enacted at the time bids are received, whether or not yet effective.

4.7 PERMITS, FEES AND NOTICES

4.7.1 Unless otherwise expressly provided in the SPECIAL CONDITIONS, the Contractor will 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 Contract and which are legally required at the time the bids are received, and the same will at all times be the property of the Owner and will be delivered to the Owner upon completion of the Project.

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4.7.2
The Contractor must 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 must 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 Contract.

4.7.3
If the Contractor observes that any of the Contract Documents are at variance with applicable laws, statutes, codes and regulations in any respect, he must promptly notify the Owner in writing, and any necessary changes must be accomplished by appropriate Modification.

4.7.4
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 will assume full responsibility therefore and will bear all costs attributable thereto.

4.8 SUPERINTENDENT

4.8.1
The Contractor must employ a competent superintendent and necessary assistants who will be in attendance at the Project site at all times during the progress of the Work. The superintendent will represent the Contractor and all communications given to the superintendent will be as binding as if given to the Contractor. Important communications will be confirmed in writing. Other communications will be so confirmed on written request in each case.

4.9 PROGRESS SCHEDULE

4.9.1
The Contractor, immediately after being awarded the Contract, must prepare and submit for the Owner’s information an estimated progress schedule for the Work. The progress schedule must be related to the entire Project to the extent required by the Contract Documents, and will provide for expeditious and practicable execution of the Work. No work will start without the Project schedule. The Contractor must submit the project schedule five days prior to start the work.

4.10 DOCUMENTS AND SAMPLES AT THE SITE

4.10.1
The Contractor must 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 will be available to the Owner upon completion of the Work.

4.11 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

4.11.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or any Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

4.11.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate a material, product or system for some portion of the Work.

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

4.11.4 The Contractor must review, approve and submit, with reasonable promptness and in such sequence as to cause no delay in the Work or in the work of the Owner or any separate contractor, all Shop Drawings, Product Data and Samples required by the Contract Documents.

4.11.5 By approving and submitting Shop Drawings, Product Data and Samples, the Contractor represents that he has determined and verified all material, 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.

4.11.6 The Contractor will not be relieved of responsibility for any deviation from the requirements or the Contract Documents by the Owner’s approval of Shop Drawings, Product Data or Samples or the Owners’ approval of the same unless the Contractor has specifically informed the Designated Representative in writing of such deviation at the time of submission and the Designated Representative has given written approval to the specific deviation. The Contractor will not be relieved from responsibility from errors or omissions in the Shop Drawings, Product Data or Samples by the Owner’s approval thereof.
4.11.7
The Contractor must direct specific attention, in writing or on resubmitted Shop Drawings, Product Data or Samples, to revisions other than those requested by the Owner or its Designated Representative on previous submittals.

4.11.8
No portion of the Work requiring submission of a Shop Drawing, Product Data or Sample will be commenced until the submittal has been approved by the Owner or Designated Representative. All such portions of the Work will be in accordance with approved submittals.

4.12 USE OF SITE

4.12.1
The Contractor will confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and must not unreasonably encumber the site with any materials or equipment.

4.13 CUTTING AND PATCHING OF WORK

4.13.1
The Contractor will be responsible for all cutting, fitting or patching that may be required to complete the Work or to make its several parts fit together properly.

4.13.2
The Contractor must not damage or endanger any portion of the Work or the work of the Owner or any separate contractors by cutting, patching or otherwise altering any work or by excavation. The Contractor must not cut or otherwise alter the work of the Owner or any separate contractor except with the written consent of the Owner and of such separate contractor. The Contractor must not unreasonably withhold from the Owner or any separate contractor his consent to cutting or otherwise altering the Work.

4.14 CLEANING UP

4.14.1
The Contractor at all times will keep the premises free from accumulation of waste materials or rubbish caused by his operations. At the completion of the Work he will remove all his waste materials and rubbish from and about the Project in full compliance with all applicable laws and regulations as well as all his tools, construction equipment, machinery and surplus materials and the Project must be thoroughly cleaned and ready for immediate occupancy by the Owner.
4.14.2
If the Contractor fails to clean up at the completion of the Work, the Owner may do so as provided in Paragraph 3.4 and the cost thereof will be charged to the Contractor.

4.15 COMMUNICATIONS

4.15.1
The Contractor must forward all communications to the Owner’s designated representative.

4.16 ROYALTIES AND PATENTS

4.16.1
The Contractor must pay all royalties and license fees. He must defend all suits or claims for infringement of any patent rights and will save the Owner harmless from loss on account thereof, except that the Owner will 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 will 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.

4.17 INDEMNIFICATION

4.17.1
To the fullest extent permitted by law, the Contractor will indemnify and hold harmless the Owner, the Designated Representative, and their agents and employees from and against all claims, damages, losses and expenses, including but not limited to attorney’s fees, arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom, and (2) is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified there under. Such obligation will not be construed to negate, abridge, or otherwise reduce any other right or of indemnity which would otherwise exist as to any party or person described in this Paragraph 4.17.
4.17.2
In any and all claims against the Owner the Designated Representative or any of their agents or employees by any employee of the Contractor, any Subcontractor anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this Paragraph 4.17 will not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers’ or workmen’s compensation acts, disability benefit acts or other employee benefit acts.

4.17.3
The obligations of the Contractor under this paragraph 4.17 will not extend to the liability of the Owner, the Designated Representative, their agents or employees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications, or (2) written directions or instructions given by the Owner, the Designated Representative, their agents or employees, provided they are the sole cause of the injury or damage.
ARTICLE 5

INSURANCE

Contractor must provide insurance as specified below:

General Liability

Includes:
- Comprehensive form
- Premises/Operations
- Underground Explosion & Collapse Hazard
- Products / Completed Operations
- Independent Contractors
- Broad From Property Damage
- Personal Injury

<table>
<thead>
<tr>
<th>Each Occurrence</th>
<th>$1,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate</td>
<td>$2,000,000</td>
</tr>
</tbody>
</table>

Automobile Liability

Includes:
- All Owned Vehicles
- Hired Vehicles
- Non-owned Vehicles

| Bodily Injury & Property Damage Combined | $1,000,000 |

Workers Compensation & Employers Liability

- As Required by State of Massachusetts

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<th>Each Accident</th>
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<td>Bodily Injury by Disease (Policy Limit)</td>
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</tr>
<tr>
<td>Bodily Injury by Disease (Each Employee)</td>
<td>$100,000</td>
</tr>
</tbody>
</table>

Additional Insurance / Requirements

- The Town of Burlington Will be named as Additional Insured

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ARTICLE 6

LIQUIDATED DAMAGES

6.1 LIQUIDATED DAMAGES

If the Contractor neglects, fails or refuses to complete the work as herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to Owner the amount of $1,000 per day, not as a penalty but as liquidated damages for such breach of Contract as hereinafter set forth, for each and every calendar day that the Contract will be in default after the date stipulated in the Contract for completing the work.
MEASUREMENT & PAYMENT

The work under this contract shall include all equipment, labor, material, supplies, etc. necessary to manufacture, transport, furnish and install the items described in the following section. The prices of which shall be included in each of the unit items as set forth in the Bid Form. All measurement for purposes of payment shall be based upon actual field quantities used, removed, excavated, etc., in the field of each of the following items.

Measurement and payment for each of the following items shall include the full compensation for furnishing and installing the pipe, bedding, excavation, placing and removing decking, sheeting and bracing, removing existing pipe where directed, removing existing gate valves, boxes and covers, hydrants and tees, backfilling, water handling, disposal of excavated material, etc., as depicted upon the plan set or as directed by the Engineer.

**Items 1-7:** 24” to 4” Zinc Coated Cement Lined Ductile Iron Pipe – Class 52 Push on Gasket Join

The work consists of the installation of class fifty two (52), twenty four (24) inch, sixteen (16) inch, twelve (12) inch, ten (10) inch, eight (8) inch, six (6) inch, and four (4) inch zinc coated cement lined ductile iron push on gasket joint pipe.

The exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179. The mass of the zinc applied shall be 200 g/m2 of pipe surface area. A finishing layer topcoat shall be applied to the zinc. The mean dry film thickness of the finishing layer shall not be less than 3 mils with a local minimum not less than 2 mils. The zinc coating system shall conform to ISO 8179-1 “Ductile iron pipes – External zinc-based coating – Part 1: Metallic zinc with finishing layer. Second edition 2004-06-01.”

The pipe shall include a factory applied bituminous coating over the zinc coating (in accordance with AWWA C151) shall be furnished on the exterior of all underground piping unless specified otherwise.

Acceptable pipe manufactures:
1. Tyler
2. Griffin
3. Union
4. Us Pipe
5. Or Approved Equal

Once the pipe is in place in the trench, the pipe will also be wrapped in a protective polyethylene encasement per ANSI/AWWA C105/A21.5-99, updated through the 2000 edition. Polyethylene encasement will be manufactured by U.S. Pipe or approved equal.

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manufacturer. Considered incidental to this bid item, will be the installation of the polyethylene encasement and all materials necessary to secure/attach the encasement to the pipe.

Considered incidental to these unit items, will be the cost of any regular field gaskets, necessary to seal the push on joint of the ductile iron pipe lengths. Any other specialty gaskets called for on the plan set, will be paid for under the appropriate bid item.

Measurement and payment for all specified diameters of zinc coated cement lined ductile iron pipe class fifty two (52) with push on gasket joint shall be per linear foot of actual pipe installed and measured in the field.

**Item 8: 12” Zinc Coated Cement Line Ductile Iron Pipe – Class 52 Push On Gasket Joint With Flanged End**

The work consists of the installation of class fifty two (52) twelve (12) inch coated cement lined ductile iron pipe push on gasket joint pipe with flanged end. The flanged end will allow for connection to the proposed meter located within the proposed meter pit manhole, as depicted upon the plan set.

The exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179. The mass of the zinc applied shall be 200 g/m² of pipe surface area. A finishing layer topcoat shall be applied to the zinc. The mean dry film thickness of the finishing layer shall not be less than 3 mils with a local minimum not less than 2 mils. The zinc coating system shall conform to ISO 8179-1 “Ductile iron pipes – External zinc-based coating – Part 1: Metallic zinc with finishing layer. Second edition 2004-06-01.”

The pipe shall include a factory applied bituminous coating over the zinc coating (in accordance with AWWA C151) shall be furnished on the exterior of all underground piping unless specified otherwise.

Acceptable pipe manufactures:

1. Tyler
2. Griffin
3. Union
4. Us Pipe
5. Or Approved Equal

Considered incidental to these unit items, will be the cost of any regular field gaskets, necessary to seal the push on joint and flanged end of the ductile iron pipe lengths. Any other specialty gaskets called for on the plan set, will be paid for under the appropriate bid item.

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Measurement and payment for all specified diameters of zinc coated cement lined ductile iron pipe class fifty two (52) with push on gasket joint with flanged end shall be per linear foot of actual pipe installed and measured in the field.

**Items 9-10:  1” and 2” Type K Copper Tubing**

The work consists of the installation of one (1) inch and two (2) inch type K copper tubing.

The copper tubing shall be manufactured by The Mueller Streamline Company, or approved equal.

Measurement and payment for one (1) inch and two (2) inch type K copper tubing shall be per linear foot of actual copper tubing installed and measured in the field.

**Items 11-13:  6” to 2” Temporary Water Main**

The work consists of the installation of six (6), four (4), and two (2) inch temporary water main, as depicted upon the plan set, or as directed by the Engineer.

The temporary water main shall be a rigid plastic pipe, capable of withstanding H-20 wheel loading traffic, and be able to withstand unexpected impacts.

The price shall also include the maintenance of the temporary water main system by the Contractor, for the duration of the project. The Contractor **MUST** be available twenty four (24) hours, seven (7) days a week, for emergency issues that might arise with the temporary plastic water main.

In the event that the Contractor is not available and it is necessary for the Town of Burlington Water Division to respond to the Emergency, the Contractor will be held responsible for any overtime, or other fees, for all responding Town of Burlington Employees.

Measurement and payment for 6” to 2” temporary water main shall be based upon the actual liner footage of temporary water main placed and tested in the field.

**Item 14:  4” Temporary Hydrant Connection on Temporary Water Main**

The work consists of the installation of temporary hydrant riser plugs on the proposed six (6) inch and four (4) inch water mains, as depicted upon the plan set, or as directed by the Engineer.

The proposed connections shall be two and a half (2.5) inches in diameter, to match the existing fire hydrant connections, for purpose of standardization for emergency services.

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Also considered incidental to this item, will be the marking/bagging of the existing fire hydrants that are taken out of service, indicating in an emergency situation the existing hydrants are not functioning, by means of tapped plastic bag, or clear sign affixed to the existing hydrant reading “hydrant out of order.”

Measurement and payment for 4” temporary hydrant connection on temporary water main, shall be made per temporary hydrant connection installed in the field.

**Items 15-18: 24” x 24” to 16” by 16” Tee with Thrust Block**

The work consists of the installation twenty four (24) inch by twenty four (24) inch tee and thrust block, twenty four (24) inch by eight (8) inch tee and thrust block, and twenty four (24) inch by six (6) tee and thrust block, and sixteen (16) inch by sixteen (16) inch tee and thrust block, as depicted upon the plan set, or as directed by the Engineer.

All tees shall be manufactured to the same standards, and by the same manufactures, as specified for the ductile iron pipe items one (1) to five (5).

Once a tee is set in the field, a concrete thrust block will be poured in place in a form, against the undisturbed trench wall, to the specified square footage, for the branch leg of the tee. The specifications for the size requirements of the thrust block can be found upon the plan set. The concrete for the thrust block will be paid for under the appropriate bid item as set forth in the Bid Form.

Payment for all specified diameters of tee and thrust block shall be per unit, a unit consist of the one tee and thrust block, installed and measured in the field.

**Items 19-20: 24” and 16” Butterfly Gate Valve and Box**

The work consists of the installation of twenty four (24) inch and sixteen (16) inch butterfly style gate valves and water gate boxes, both bottoms and tops, and necessary riser sections, as depicted upon the plan set, or as directed by the Engineer.

All twenty four (24) and sixteen (16) inch gate valves shall be open left Mueller Lineseal XP Butterfly valves, manufactured by the Mueller Company catalog number 5227-6 or approved equal.

All gate valve boxes must be North American made, manufactured by Bibby-Ste-Croix part V446, slide top adjustment, or approved equal.

Measurement and payment for twenty four (24) and sixteen (16) inch butterfly gate valve and box shall be based upon the actual number of butterfly gate valves and boxes installed in the field.
Town of Burlington
Public Works Construction
Department of Public Works
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Items 21-24:  12” to 6” Gate Valve and Box

The work consists of the installation of twelve (12), ten (10), eight (8), and six (6) inch gate valves and water gate boxes, both bottoms and tops, and necessary riser sections, as depicted upon the plan set, or as directed by the Engineer.

All gate valves, twelve (12) inches in size or smaller, shall be open left resilient wedge gate valves, manufactured by the Mueller Company catalog number A-2361-20 or approved equal.

All gate valve boxes must be North American made, manufactured by Bibby-Ste-Croix part V446, slide top adjustment, or approved equal.

Measurement and payment for twelve (12) inch to six (6) inch gate valve and box shall be based upon the actual number of gate valves and boxes installed in the field.

Items 25-30:  24” x 16” to 6” x 4” Reducer

The work consists of the installation of twenty four (24) inch by sixteen (16) inch reducer, twenty four (24) inch by ten (10) inch reducer, sixteen (16) inch by twelve (12) inch reducer, eight (8) inch and six (6) inch reducer, and six (6) inch by four (4) inch reducer, as depicted upon the plan set, or as directed by the Engineer.

All reducers shall be manufactured to the same standards, and by the same manufactures, as specified for the ductile iron pipe items one (1) to five (5), or approved equal, as determined by the Engineer.

Measurement and payment for twenty four (24) inch by twelve (12) inch to six (6) inch by four (4) inch reducer will be based upon the actual number of reducers installed in the field.

Items 31-37:  24” to 4” Megalug Connections

This work shall consist of the installation of twenty four (24) inch, sixteen (16) inch, twelve (12) inch, ten (10) inch, eight (8) inch, six (6) inch, and four (4) inch Megalug mechanical connectors, series 1100 by EBAA Iron Inc., or approved equal, as determined by the Engineer.

New Megalugs will be installed to secure any newly installed bends, solid sleeve connectors, gates or any other fixtures requiring mechanical restraint to either; existing pipe, newly installed pipe, or hydrant assemblies.

Measurement and payment for the twenty four (24) inch to four (4) inch Megalug connections will be based upon the actual number of Megalug connections installed in the field.

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Item 38: Field Lok 350 Gaskets

This work shall consist of the installation of Field Lok 350 Gaskets in the field at on either side of all fittings, for the specified number on each side of the fitting, as stated in the table on the plan set, or as directed by the Engineer.

All gaskets intended to be used to help secure the pipe, will be Field Lok 350 Gaskets manufactured by US Pipe, or approved equal, and must be compatible with the pipe manufacturer.

Field Lok 350 Gaskets will be installed in the field on both sides of any fittings as stated in the table as shown upon the plan set, for the appropriate number of joints.

Measurement and payment for this Field Lok 350 Gaskets will be made per each Field Lok 350 Gasket installed in the field.

Items 39-44: 24” to 4” Bend (11.25 degree through 90 degree) with Thrust Block

This work shall consist of the installation of twenty four (24) inch, twelve (12) inch, ten (10) inch, eight (8) inch, six (6) inch, and four (4) inch, class fifty two (52) cement lined ductile iron pipe bends and solid sleeve connectors, eleven and one quarter (11.25) to ninety (90) degrees in bend/curvature, as depicted upon the plan set or as directed by the Engineer.

Any bends that may be necessary for purpose of deflecting the proposed water main, deflecting the existing water main, moving of existing water mains, etc., shall be determined in the field upon the time of excavation.

All bends shall be manufactured to the same standards, and by the same manufactures, as specified for the ductile iron pipe items one (1) to five (5).

Once a bend is set in the field, a concrete thrust block will be poured in place in a form, against the undisturbed trench wall, to the specified square footage, for the degree and size of the bend. The specifications for the size requirements of the thrust block can be found upon the plan set. The concrete for the thrust block will be paid for under the appropriate bid item as set forth in the Bid Form.

Measurement and payment for the twenty four (24) inch to four (4) inch bend will be based upon the actual number of bends installed in the field.

Items 45-49: 12” to 4” Solid Sleeve Coupling

This work shall consist of the installation of twelve (12) inch, ten (10) inch, eight (8) inch, six (6) inch, and four (4) inch solid sleeve connectors, as depicted upon the plan set or as directed by the Engineer.
All solid sleeve couplings that will connect ductile iron pipe to ductile iron pipe shall be manufactured to the same standards, and by the same manufactures, as specified for the ductile iron pipe items one (1) to five (5), or approved equal as determined by the Engineer.

For any specialty solid sleeve couplings necessary to connect two (2) dissimilar pipe materials, the couplings shall be manufactured by Romac Industries, Inc., model Macro HP, or approved equal, and purchased for the necessary pipes to be connected and diameter of said pipes.

Measurement and payment for the twelve (12) inch to four (4) inch solid sleeve coupling will be based upon the actual number of solid sleeve couplings installed in the field.

**Item 50: 6” Hydrant Assembly with Mechanical Joint Restraints**

This work shall consist of the installation a six (6) inch hydrant assembly and all necessary mechanical joint restraints, as depicted upon the plan set or as directed by the Engineer.

All hydrants shall be manufactured by Clow Valve, Co. Clow Eddy model number F-2640, with a drain port. No other hydrants will be allowed under this bid item, for the purpose of standardization, for emergency purposes.

Measurement and payment for the six (6) inch hydrant assembly with mechanical joint restraints will be based upon the actual number of hydrant assemblies installed in the field.

**Items 51-56: 24” to 4” Mechanical Cap with Thrust Block**

This work shall consist of the installation of twenty four (24) inch, sixteen (16) inch, ten (10) inch, eight (8) inch, six (6) inch, and four (4) inch mechanical cap and thrust block, as depicted upon the plan set or as directed by the Engineer.

Once an existing water main that is to be permanently disconnected, a mechanical cap with thrust block will be placed over the outside diameter of the pipe to be abandoned, or left for a future connection point.

Once a mechanical cap is set in the field, a concrete thrust block will be poured in place in a form, against the undisturbed trench wall, to the specified square footage, for the size of the mechanical cap, based upon the diameter of the pipe. The specifications for the size requirements of the thrust block can be found upon the plan set. The concrete for the thrust block will be paid for under the appropriate bid item as set forth in the Bid Form.
Measurement and payment for the twenty four (24) inch to four (4) inch mechanical cap with thrust block will be based upon the actual number of mechanical cap with thrust block installed in the field.

**Item 57: 1” Curb Stop and Box**

This work shall consist of the installation of one (1) inch domestic water curb stops and curb stop box.

The curb stop shall be manufactured by The Mueller Company, model number P-25209N one (1) inch, or approved equal.

All curb stop boxes must be North American made, manufactured by Bibby-Ste-Croix part V213 and S201, slide top adjustment, or approved equal.

Measurement and payment for one (1) inch curb stop and box shall be based upon the actual number of curb stops and boxes installed.

**Item 58: 1” Corporation Stop and Tap**

This work shall consist of the installation of one (1) inch corporation stop and tap, for the purpose of a new domestic tap.

The corporation stop shall be manufactured by The Mueller Company, model number B-25028N one (1) inch, or approved equal.

All corporation stop and taps will be directly tapped and threaded into water main, by means of mechanical tapping machine. NO saddle corporations of any kind will be permitted.

Measurement and payment for one (1) inch corporation stop and tap will be based upon each one (1) inch corporation stop and tap installed in the field.

**Item 59: 2” Curb Stop and Box**

This work shall consist of the installation of two (2) inch domestic water curb stops and curb stop box.

The curb stop shall be manufactured by The Mueller Company, model number P-25209N two (2) inch, or approved equal.

All curb stop boxes must be North American made, manufactured by Bibby-Ste-Croix part V213 and S201, slide top adjustment, or approved equal.
Measurement and payment for two (2) inch curb stop and box shall be based upon the actual number of curb stops and boxes installed.

**Item 60: 2” Corporation Stop and Tap**

This work shall consist of the installation of two (2) inch corporation stop and tap, for the purpose of a new domestic tap. The corporation stop shall be manufactured by The Mueller Company, model number B-25028N two (2) inch, or approved equal.

All corporation stop and taps will be directly tapped and threaded into water main, by means of mechanical tapping machine. NO saddle corporations of any kind will be permitted.

Measurement and payment for two (2) inch corporation stop and tap will be based upon each two (2) inch corporation stop and tap installed in the field.

**Item 61: 1” to ¾” Coupling**

This work shall consist of the installation of one (1) inch to three quarter (3/4) coupling, to allow for transition from a one inch copper line to an existing three quarter (3/4) inch copper line.

The corporation stop shall be manufactured by The Mueller Company, model number H-15071N one (1) inch to three quarter (3/4) inch, or approved equal.

Measurement and payment for one (1) inch to three quarter (3/4) inch coupling will be based upon each coupling installed in the field.

**Item 62: Test Pit (Paved or Unpaved)**

This work shall consist of the excavation of test pits, through paved or unpaved surfaces, for investigation of underground utilities and the depth of such utilities.

When Test Pits are required where the Contractor must break through pavements, he shall make as small a test pit as possible. The Contractor shall backfill the test pit with suitable material and compact the test pit to the grade of the existing surface. If a test pit is conducted in a paved area the existing pavement shall be saw cut around the entire perimeter of the test pit. Upon back fill of the test pit, the test pit shall be repaved to a thickness matching the adjacent or existing thickness of pavement, whichever applicable.

Payment for hot mix asphalt concrete, cement concrete, and loaming, hydro-seeding, and fertilizing to restore the test pit area will be paid for separately under their respective item and shall not be included in the unit price for this item.
Measurement and payment for test pits shall be measured by each test pit excavated and back filled, including compaction in one (1) foot lifts, in the field.

**Item 63: Unclassified Excavation**

This work shall consists of the excavation, removal and disposal of any existing subsurface soils encountered during the excavation process deemed unsuitable for a proper functional base, as determined by the Engineer. If, in the opinion of the Engineer, the material at or below normal grade for the bottom of excavation is unsuitable for a pipe foundation base, it shall be removed to such depths and widths within the limits of payment as directed by the Engineer.

The unit price for this item shall constitute full compensation for excavation below normal grade and disposal of unsuitable material. The Contractor will not be reimbursed for over-excavating which has not been ordered by the Engineer. The Contractor shall backfill any such over-excavated areas in accordance with the specifications, at no additional cost to the owner. Unclassified excavation material will become the property of the contractor and will be disposed of legally offsite.

Once the unsuitable material has been excavated and removed, it shall be the responsibility of the Contractor to replace any material removed with the appropriate amount of replacement material, as approved by the Engineer. Any necessary backfill material will be paid for under the appropriate unit item as set forth in the Bid Form.

The unit price shall constitute full compensation for excavation of the unsuitable material shall be made on the basis of the actual number of cubic yards removed in the field. The unit price shall constitute full compensation for excavation of the unsuitable material. The price shall include related works, and disposal, for all necessary backfilling, and for furnishing all additional material needed for backfilling as specified.

Measurement and payment shall be per cubic yard of material actually removed and disposed of in the field.

**Item 64: Rock Excavation**

This work shall consists of the excavation, removal and disposal of any existing subsurface ledge or large rocks, measured in situ one (1) cubic yard or larger in volume, encountered during the excavation process deemed unsuitable for a proper functional base or interfere with the proposed path of the pipeline, as determined by the Engineer.

If, in the opinion of the Engineer, the any rock material at or below normal grade for the bottom of excavation is unsuitable for foundation or in the proposed path of the pipeline, it shall be removed to such depths and widths within the limits of payment as directed by the Engineer.

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The unit price for this item shall constitute full compensation for excavation below normal grade and disposal of the rock material. The Contractor will not be reimbursed for over-excavating which has not been ordered by the Engineer. The Contractor shall backfill any such over-excavated areas in accordance with the specifications, at no additional cost to the owner. Unclassified excavation material will become the property of the contractor and will be disposed of legally offsite.

Once the rock material has been excavated and removed, it shall be the responsibility of the Contractor to replace any material removed with the appropriate amount of replacement material, as approved by the Engineer. Any necessary backfill material will be paid for under the appropriate unit item as set forth in the Bid Form.

Measurement and payment for the rock excavation will be based upon the actual number of cubic yards removed and disposed of in the field.

**Item 65: Gravel Borrow**

This work shall consist of the installation of additional gravel borrow as necessary to replace any excavated material, found to be unsuitable base material, as determined by the Engineer. The gravel borrow shall be mixed with existing sub base material which results from the reclamation process to be a uniform mixture and provide a base for the proposed roadway surface.

The gravel borrow shall consist of inert material that is hard, durable stone and coarse sand, free from loam and clay, surface coating, and deleterious material.

Gradation requirements for gravel shall be determined by AASHTO T 11 and T 27 and shall conform to the following:

<table>
<thead>
<tr>
<th>Sieve Designation</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.5 mm</td>
<td>50 – 85</td>
</tr>
<tr>
<td>4.75 mm</td>
<td>40 – 75</td>
</tr>
<tr>
<td>300 μm</td>
<td>8 – 28</td>
</tr>
<tr>
<td>75 μm</td>
<td>0 – 10</td>
</tr>
</tbody>
</table>

Maximum size of stone in gravel shall be as follows:

- **Type a**: 6 inches
- **Type b**: 3 inches
- **Type c**: 2 inches

Considered incidental to this item, will be the cost of a sieve analysis, performed by a certified laboratory, as ordered by the Engineer, to test any gravel borrow, as necessary,
that is brought onto the construction site. It will be the responsibility of the Contractor to submit a sample of the gravel borrow to a certified laboratory for testing, if ordered by the Engineer, before use in the base material. Measurement and payment for gravel borrow will be based upon the actual number of tons of gravel installed in the field.

**Item 66: Sand Borrow**

This work shall consist of the installation of clean sand acting as a buffer around any newly installed water services.

The sand from the sand borrow shall consist of clean, inert, hard, durable grains of quartz, or other hard durable rock, free from loam or clay, surface coatings, and deleterious materials. The allowable amount of material passing a No. 200 sieve as determined by AASHTO T 11 shall not exceed ten (10) percent by weight. The maximum particle size shall be three eighths (3/8) of an inch.

Measurement and payment for sand borrow will be based upon the actual number of tons of sand installed in the field.

**Item 67: ¾” Crushed Stone**

This work shall consist of the furnishing and installation of three quarter (¾) inch crushed stone for the purposes of back fill around any proposed drainage pipes and structures, or as directed by the Engineer.

Measurement and payment for three quarter (3/4) inch crushed stone will be based upon the actual number tons of stone installed in the field.

**Items 68-70: Superpave Intermediate Course – 19.0 mm and 9.5 mm Patching and Finish Paving**

This work shall consist of the machine placement of HMA Superpave mix designs including **SIC - 19.0, 100 Gyrations and SSC - 9.5, 75 Gyrations** courses, for the purposes of patching of the trench, with two (2) inches of 19.0 mm, Item sixty eight (68), for the purposes of securing the trench for a temporary time. Items sixty nine (69) and seventy (70) will be used to patch the trench permanently, when and as directed by the Engineer. The permanent patch shall consist of two (2) inches of 19.0 mm and the reaming to full depth of the asphalt patched in 9.5 mm to existing line and grade, compacted in two (2) inch lifts by means of mechanical compaction equipment, and placed by means of mechanical equipment.

The HMA pavement shall be constructed as shown on the plans and as directed on the prepared or existing base in accordance with these specifications and in close conformity with the lines, grades, compacted thickness and typical cross section as shown on the

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plans. Unless specified otherwise, each HMA pavement course placed shall be comprised of one of the mixture types listed in Table 455.1

A job mix formula for both the binder and top courses to be used throughout the entire project must be submitted to the Engineer for Approval BEFORE placement of the pavement can start.

SIC – 19.0mm is to be placed at the required final thickness as directed by the Engineer to match existing pavement thickness conditions in the field.

SSC – 9.5mm is to be placed at the required final thickness as directed by the Engineer to match existing pavement thickness conditions in the field.

Tack Coat – 0.05 – 0.1 gallon/square yard (to be applied on the binder course before placement of final top course). The cost of the tack coat is considered incidental to this unit item.

<table>
<thead>
<tr>
<th>Pavement Course</th>
<th>Mixture Type</th>
<th>Mixture Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friction Course</td>
<td>Open-Graded Friction Course - Polymer Modified</td>
<td>OGFC – P</td>
</tr>
<tr>
<td>Surface Course</td>
<td>SUPERPAVE Surface Course - 4.75</td>
<td>SSC - 4.75</td>
</tr>
<tr>
<td></td>
<td>SUPERPAVE Surface Course - 9.5</td>
<td>SSC - 9.5</td>
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<tr>
<td></td>
<td>SUPERPAVE Surface Course - 12.5</td>
<td>SSC - 12.5</td>
</tr>
<tr>
<td></td>
<td>SUPERPAVE Surface Course - 19.0</td>
<td>SSC - 19.0</td>
</tr>
<tr>
<td>Intermediate Course</td>
<td>SUPERPAVE Intermediate Course - 12.5</td>
<td>SIC - 12.5</td>
</tr>
<tr>
<td></td>
<td>SUPERPAVE Intermediate Course - 19.0</td>
<td>SIC - 19.0</td>
</tr>
<tr>
<td>Base Course</td>
<td>SUPERPAVE Base Course - 25.0</td>
<td>SBC - 25.0</td>
</tr>
<tr>
<td></td>
<td>SUPERPAVE Base Course - 37.5</td>
<td>SBC - 37.5</td>
</tr>
<tr>
<td>Leveling Course</td>
<td>SUPERPAVE Leveling Course - 4.75</td>
<td>SLC - 4.75</td>
</tr>
<tr>
<td></td>
<td>SUPERPAVE Leveling Course - 9.5</td>
<td>SLC - 9.5</td>
</tr>
<tr>
<td>Bridge Surface Course</td>
<td>SUPERPAVE Bridge Surface Course - 9.5</td>
<td>SSC-B - 9.5</td>
</tr>
<tr>
<td></td>
<td>SUPERPAVE Bridge Surface Course - 12.5</td>
<td>SSC-B - 12.5</td>
</tr>
<tr>
<td>Bridge Protective Course</td>
<td>SUPERPAVE Bridge Protective Course - 9.5</td>
<td>SPC-B - 9.5</td>
</tr>
<tr>
<td></td>
<td>SUPERPAVE Bridge Protective Course - 12.5</td>
<td>SPC-B - 12.5</td>
</tr>
</tbody>
</table>

When a SUPERPAVE Surface Course - 19.0 (SSC - 19.0) is specified in the contract, the Laboratory Trial Mix Formula (LTMF) aggregate gradation shall provide a fine-graded HMA mixture as defined in Subsection 455.42F.

The Contractor is responsible for providing an appropriate Quality Control system to ensure that all materials and workmanship meet the required quality levels for each specified Quality Characteristic.

All joints shall be treated with a Tack Coat, including longitudinal seams.
Measurement for payment for Hot Mix Asphalt Superpave mix design pavement shall be based upon the number of tons of such material placed and rolled as measured in the field. The price of which shall constitute full compensation for removal and disposal of any temporary pavement, restoring and regarding any gravel base course, application of tack coat bleeder berm, disposal of any excess material and all work incidental thereto.

**Item 71: Superpave Asphalt (19.0 mm to 9.5 mm) Handwork**

This work shall consist of the placement Superpave asphalt by hand. Handwork shall include all materials, labor and equipment to adjust driveway aprons and apply pavement around raised structures as directed by the Engineer and according to the special conditions.

The work shall consist of saw cutting, excavation removal and disposal and repair of the driveway apron or existing pavement, restoring or regrading gravel base course, installation of handwork with tack coat and all work incidental as directed by the Engineer. Upon removal of material, the material will be considered property of the contractor and the disposal of said material will be considered part of unit item price. The Engineer will have the final say as to the manner of restoration of all driveway aprons.

Measurement for payment for Superpave asphalt hand work shall be based upon the actual number of tons of such material placed and rolled in the field. The price of which shall constitute full compensation for removal and disposal of any temporary pavement, restoring and regarding any gravel base course, application of tack coat bleeder berm, disposal of any excess material and all work incidental thereto.

**Item 72: Loam and Hydro Seed**

This work shall consist of furnishing and placing of four (4) inches of screened loam or topsoil, re-handled and spread and machine spread hydro seed or approved equal as directed by the Engineer.

The loam shall be pre-screened before delivery to the site and be free of any rocks and stones greater than three quarters (¾) of an inch trash, debris, refuse, etc. Any loam delivered to the site that is found to be sub-standard in the opinion of the Engineer, shall be removed and trucked away by the Contractor, the price of which shall be considered incidental to this item.

The hydro seed mixture shall consist of a cellulose fiber mulch, fertilizer and versatile grass seed mixture, capable of growing in shade, direct sun and partial conditions of shade and sun.

Measurement and payment for loam and hydro seed shall be per square yards as measured in the field. The price of which shall also include the grading of areas where stockpiles of topsoil are removed.
Item 73: Bark Mulch

This work shall consist of the furnishing and placing of new bark mulch and in close conformity with the existing lines and grades, as directed by the Engineer, to restore any previously mulched areas disturbed by the paving process, to preexisting conditions, by matching as close as possible, the color and material of the existing mulch. The minimum depth of placement shall be two (2) inches.

Measurement and payment for bark mulch will be per square yard of material actually placed as measured in the field.

Item 74: Cutting, Removal, and Disposal of Existing Asbestos Cement Water main, 6” to 12”

This work shall consist of the excavation, cutting/disconnection, bagging, and disposal of existing asbestos cement pipe encountered, and no longer needed.

Before any asbestos cement pipe can be cut/disconnected by the Contractor, all employees that will come in contact with the asbestos pipe, must have completed the required “8 Hour OSHA Class II Asbestos Training: Asbestos Cement Pipe (ACP) Worker Safety Course” per MassDEP Asbestos Cement Pipe Guidance Document, updated July 2019. PRIOR to any work on asbestos pipe, proof of all employees, including but not limited to laborers, operators, superintendents, etc., anyone who will present at the time that the asbestos pipe is to be cut/disconnected, having successfully completed the required course MUST be submitted to the Owner.

Considered incidental to this item to the price of this item as set forth in the Bid Form, will be any cost incurred by the Contractor to rent any specialty equipment to cut/disconnect the asbestos pipe, purchase all necessary bagging material, dumpster rental and storage, and any other materials required under the regulations, to legally dispose of the asbestos cement pipe.

The Contractor will be responsible to provide the Owner with copies of any disposal paperwork, forms, or permits necessary to dispose of the asbestos cement pipe in an offsite and legal manner. The Contractor is also responsible for any fees associated with any legally required paperwork, and the price of which will be considered incidental to the price, as set forth in the Bid Form.

Measurement and payment for cutting, removal, and disposal, in an offsite and legal manner, of existing asbestos cement water main will be made basis of actual liner feet of pipe cut, removed and disposed of in the field.

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Item 75: Cutting, Removal, and Disposal of Existing Cast Iron and Ductile Iron Water Main, 4” to 12”

This work shall consist of the excavation, cutting/disconnection, and disposal of existing cast iron and ductile iron pipe encountered, and no longer needed.

Measurement and payment for cutting, removal, and disposal, in an offsite and legal manner, of existing cast iron water main will be made basis of actual liner feet of pipe cut, removed and disposed of in the field.

Item 76: Cutting, Removal, and Disposal of Existing Hydrant Assembly and Laterals

This work shall consist of the excavation, disconnection, and disposal of an existing hydrant assembly to make room for the newly proposed hydrant connection.

The existing hydrant assembly shall be cut, removed and disposed of, as depicted upon the plan set or as directed by the Engineer, to allow for the installation of any newly proposed hydrant assembly in a location that is freely accessible and uninhibited for emergency access purposes.

Measurement and payment for cutting, removal, and disposal, in an offsite and legal manner, of existing hydrant assemblies will be made per hydrant assembly, cut, removed and disposed of in the field.

Item 77: Clearing and Grubbing

This work shall consist of clearing, grubbing, cutting, removal, and disposal of all vegetation and debris from existing vegetated areas, as shown on the plan set or as directed by the Engineer. This work shall also include the preservation from injury or defacement of all vegetation and objects designated by the Engineer to remain.

The stumps of all trees, brush, and major roots shall be grubbed and removed in all areas in preparation for the proposed building pad, as shown upon the plan set or as designated by the Engineer, to within one (1) foot of existing surface grade.

Trees having the shortest diameter of at least nine (9) inches or less, shall be considered part of the clearing and grubbing item.

All material removed will become the property of the contractor to dispose of in an offsite legal manner.

Measurement and payment for clearing and grubbing, shall be based upon the actual number of square yards cleared and grubbed in the field.
Item 78: Concrete for Thrust Blocks

This work shall consists of the installation of poured concrete thrust blocks, to back and support any newly installed water main tees, bends, hydrant laterals, etc.

Concrete for thrust blocks shall be 4,000 psi at twenty eight (28) days, with three quarter (¾) inch coarse aggregate, 610 pounds cement per cubic yard, seven (7) percent air entrained (AASHTO – M154), Type A water reducing admixture (AASHTO – M194), four to five (4 to 5) inch slump.

Once the concrete arrives on site and it is determined to need a small addition of water before the pour, water must be added prior to discharge from the shoot, and spun a minimum of thirty (30) times at mixing speed. During the pour, if the concrete is setting too quickly due to heat or wind, NO WATER is allowed to be added once it has been poured. Instead a curing agent must be added to slow the curing process, allowing more workable time with the concrete.

Thrust blocks will be formed to the square feet of required bearing area as specified on the plan set, and to a depth of one (1) foot above and (1) foot below, and one (1) foot of depth against the undisturbed trench wall.

Considered incidental to this bid item will be the constructing and forming of the wooden forms in the trench. The concrete shall be formed and poured in such a manner to prevent any contact, with the concrete and any kind of fastening bolts of the mechanical connection piece.

Item 79: Traffic Management Plan

This work shall consist of all signage, barricade structures, traffic barrels, cones, and all other appurtenances and work required to close the road, maintain a proper detour route, and reopen the road at the completion of the Project. All signage and barricades shall be installed at heights and sight distances to the maximum extent practicable as stated in the 2009 Edition Manual on Uniform Traffic Control Devices (MUTCD). All signage shall be affixed to permanent structures such as telephone poles or other existing sign posts. All sign names and barricade names stated herein are references to the 2009 MUTCD. The Contractor shall be responsible for the removal and disposal of all components of this item.

This work also consist of all work, labor, equipment, supplies and materials necessary to paint, with fluorescent orange paint, and mark and erect construction signage on/for roads with raised structures/gates after the reclamation of the roadway surface. All paint and signage that fades/become damaged will be the responsibility of the contractor to freshen up/replace, as directed by the Engineer.

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The Traffic Management plan does not include the cost of Police Detail Officer(s). The cost of the Police Detail Officer(s) will be paid for by the Town of Burlington. The responsibility to arrange the appropriate amount of Police Detail Officer(s) is the responsibility of the Contractor. The quantity will be determined by the Engineer and/or Town of Burlington Police Department. The contractor is responsible to arrange the Police Detail Officer(s) the night before the Officer(s) are needed and also responsible for the appropriate cancellation of the Officer(s) if the need should arise. The Town of Burlington Police Department requires two (2) hour notice for proper cancellation of a detail. Failure of the Contractor to cancel the Officer(s) in the appropriate time will cause the Owner to back charge the Contractor for the charges incurred for each Officer(s).

\textit{Changeable Message Signs}

The traffic management plan shall consist of two (2) temporarily changeable message signs installed as directed by the Engineer, for two (2) weeks prior to the construction on the roads stated below and removed once the work has been started.

The message for the two (2) weeks prior to the construction shall read “Utility Work Ahead Expect Detours and the appropriate dates of the roadway work, Seek Alternate Routes.”

The Owner shall not be responsible for any costs incurred if the changeable message signs are not removed once directed by the Engineer. The changeable message signs shall be compliant with Section 2L.01 and Section 6F.60 of the 2009 Edition MUTCD, as amended.

\textit{Road Closure Signs}

Road closure signs shall be W20-3 and installed at the as directed by the Engineer.

\textit{Detour Signs}

Detour signs without arrows shall be M4-8 and installed at the approximate locations as directed by the Engineer.

Turning detour signs shall be either M4-9 or M4-10 for the as directed by the Engineer. One type of sign shall be selected for the entire detour route and a combination of the two will not be acceptable.

\textit{Barricades, Traffic Barrels, Cones}

Detour barricades shall be Type 3 Barricades based on the 2009 MUTCD with warning lights. These barricades shall be installed in a method that, when and where possible, will allow residents to access their property, as best as possible to prevent damage to the new pavement surface, while detouring common traffic.

\textit{Adams Street Water Main – 2020}

19C-411-0042 (7382)

\textit{Thursday, July 30, 2020 at 10:00 A.M.}
Worksite barricades shall be installed at the worksite for the duration of the road closure to prevent all types of traffic to enter. Acceptable worksite barricades, fencing, traffic barrels, cones, or other barricades as approved by the Engineer.

Measurement and payment for traffic management shall be a lump sum payment for implementing and maintaining the traffic management plan as well as all painting of raised structures and gates described herein. The lump sum price shall constitute furnishing, installing, and dismantling and disposing all the necessary barricades to fully isolate each construction site, as necessary, for the entire duration of this contract.

**Item 80: Silt Sack with Overflow Bypass**

This work shall consist of the furnishing and installation of silt sack catch basin filters, with overflow bypass holes, Siltsack – High-Flow-Type A by ACF Environmental, or approved equal. Considered incidental to the cost of this item, will include the necessary rebar lengths to support the siltsack, as shown in the attached detail specification.

Considered incidental to this item, will be routine inspection for current sedimentation/debris levels within the silt sack, and any sediment or debris found to be above the level of the overflow holes, shall be removed and disposed of in a legal manner. In the event that the silt sack is damaged or becomes full, the Contractor must remove the existing silt sack and replace with a new silt sack, at no additional cost. Inspections will also be made after each rain event, for any over sedimentation or washed out debris.

Considered incidental to this bid item, will be the removal and disposal of the silt sack, material/debris trapped in the silt sack, and the metal rebar, by the Contractor in an offsite and legal manner, once directed by the Engineer.

The silt sacks will be installed to all catch basin and adjacent catch basins on all reclaim streets prior to the start of any reclamation work, as directed by the Engineer.

Measurement and payment for silt sack with overflow bypass, shall be per silt sack installed in the field.

**Item 81: Compost Wattles**

This work shall consist of the furnishing and installation of rolled twelve (12) inch diameter compost wattles, staked as shown upon in the detail on the plan set, in place prior to any work, in the location as shown upon the plan set.

Considered incidental to this bid item, will be the removal and disposal of the compost wattles and any staking material, by the Contractor in an offsite and legal manner, once directed by the Engineer.
Measurement and payment for compost wattles will be per linear foot of compost wattle actually installed in the field.

Item 82: Hay Bales and Silt Fence

This work shall consist of placing a continuous hay bale and siltation fence barrier, or approved equal as directed by the Engineer or the Town of Burlington Conservation Agent/Commission, along easements within wetlands, as well as any section of the project that borders the 100 foot buffer zone of any wetlands as directed by the Engineer or the Town of Burlington Conservation Agent/Commission in accordance with all Environmental Protection Agency regulations.

Baled Hay or Straw

The bales should be securely staked to prevent overturning, flotation, or displacement and during installation care shall be taken to keep the bales from breaking apart. All deposited sediment shall be removed periodically. Hay bales shall be removed after construction and only after all seeded grass areas are established or removal permission is given by the Town of Burlington Conservation Agent/Commission.

Silt Fence

Where indicated on the drawings or where directed by the Engineer, the Contractor shall erect and maintain a temporary silt fence. The silt fence shall be used specifically to contain sediment from runoff water and to minimize environmental damage caused by construction. The silt fence shall be removed after construction and only after all seeded grass areas are established or removal permission is given by the Town of Burlington Conservation Agent/Commission.

The silt fence shall consist of a three (3) foot wide continuous length sediment control fabric, stitched to a two (2) foot wide, continuous length support netting, and stapled to typical wooden stakes/grade stakes, installed as shown on the drawings or as directed by the Engineer. The support netting shall be industrial strength polypropylene.

Measurement and Payment for hay bales and siltation fence shall be per linear foot, set in place and approved, which the price shall include the maintenance and replacement of any damaged or disintegrated of the hay bales and siltation fence, as directed by the Engineer. The Contract unit price shall include all labor, material and equipment needed to transport, excavate, install, maintain and replace if necessary, and then remove and dispose of a legal offsite location of the hay bales and silt fence as set forth in the Bid Form.
Item 83: Sawing Asphalt Pavement

This work shall consist of the cutting/sawing of existing paved surfaces to create a cut line in the existing asphalt surface where the proposed trench will be excavated, on both sides of the proposed trench, to the width as specified.

The asphalt will be cut by means of rotary mechanical saw capable of cutting any hot mixed asphalt or cement concrete encountered while cutting/sawing for the trench. The saw shall also be capable of watering the saw blade to control dust during the cutting/sawing work.

Measurement and payment for sawing asphalt pavement shall be per linear foot for each actual foot of existing pavement cut in the field, as depicted upon the plan set or as directed by the Engineer.

Item 84: Removal and Disposal of Contaminated Soil

This work shall consist of the removal and disposal of contaminated soil, found within the trench, to the specified width and depth, or as directed by the Engineer.

The Town of Burlington contracted Roux Associates, Inc., an Environmental Consulting Firm to generate a Utility-related Abatement Measure Notification (URAM), and a Soil Management Plan, filed with the Massachusetts Department of Environmental Protection (DEP). The URAM is due to a known soil contamination, due to a petroleum release at 50 Middlesex Turnpike, the Mobile gas station. A copy of the URAM and Soil Management Plan, are available in the Appendix of this contract.

Roux has documented the petroleum soils release area, and DOES NOT anticipate any contaminated soils to be encountered or discovered in the proposed trench area, for this project.

This item serves as a regular bid item, in the event that there are some unexpected contaminated soil is encountered during the excavation process, and must be disposed of in an offsite legal manner. Any required disposal permits and paperwork to dispose of the soil, will be the responsibility of the Contractor and be considered incidental to this bid item as set forth in the Bid Form.

Any soil that is removed and disposed of, and therefore in need of replacement, will be paid for under the appropriate bid item.

Measurement and payment for removal and disposal of contaminated soil shall be based upon the actual number of cubic yards removed and disposed of, as measure in the field, in situ. The price of which shall include all excavation, disposal, and any permitting fees.
**Item 85: 72” Diameter Manhole Base**

This work shall consist of the furnishing and installation of a new seventy two (72) inch inside diameter manhole base to conform to the newly proposed lines and grades for the structure as specified or as directed by the Engineer.

The manhole base shall be precast by Shea Concrete Products, or approved equal, and capable of fitting with the riser section and top sections.

The manhole base shall be made of a precast concrete, casted off site and transported to the site, and capable of withstanding an H-20 wheel loading capacity. Proof of which can be requested by the Engineer, before acceptance and installation of the material. Holes shall be cored within the base section of the manhole, but allow for two (2) feet of clearance/standing room below the invert.

The purpose of the manhole will be to house a twelve (12) inch mag meter, as shown upon the plan set. The location is also shown upon the plan set, or to be located as directed by the Engineer.

The approximate invert for both sides of the manhole is 187.00’, and the hole shall be cored and booted for a twelve (12) inch nominal diameter ductile iron pipe. The Contractor is responsible for field verifying the invert before ordering the structure, based upon the location of the proposed structure.

Measurement and payment for manhole base shall be per each manhole base set in field.

**Item 86: 72” Diameter Manhole Riser Section**

This work shall consist of the furnishing and installation of a new seventy two (72) inch inside diameter manhole riser sections, as necessary, to conform to the newly proposed lines and grades for the structure as specified or as directed by the Engineer.

The riser section shall be precast by Shea Concrete Products, or approved equal, and capable of fitting with the base and top sections.

The manhole riser section shall be made of a precast concrete, casted off site and transported to the site, and capable of withstanding an H-20 wheel loading capacity. Proof of which can be requested by the Engineer, before acceptance and installation of the material.

Measurement and payment for manhole riser section shall be per each manhole riser section set in field.
Item 87: 72” Diameter Manhole Top with Center Opening

This work shall consist of the furnishing and installation of a new seventy two (72) inch inside diameter manhole top with a centered thirty (30) inch diameter opening, and have a thickness of one (1) foot, to conform to the newly proposed lines and grades for the structure as specified or as directed by the Engineer.

The manhole top shall be precast by Shea Concrete Products, or approved equal, and capable of fitting with the base and riser sections.

The manhole top shall be made of a precast concrete, casted off site and transported to the site, and capable of withstanding an H-20 wheel loading capacity. Proof of which can be requested by the Engineer, before acceptance and installation of the material.

Measurement and payment for manhole top shall be per each manhole top set in field.

Item 88: 48” Diameter Sewer Manhole - Base

This work shall consist of the furnishing and installation of a new forty eight (48) inch inside diameter sewer manhole base to conform to the newly proposed lines and grades for the structure as specified on the plan set or as directed by the Engineer.

The manhole base shall be precast by Shea Concrete Products, or approved equal, and capable of fitting with the riser section and top sections.

The manhole base shall be made of a precast concrete, casted off site and transported to the site, and capable of withstanding an H-20 wheel loading capacity. Proof of which can be requested by the Engineer, before acceptance and installation of the material. Holes shall be cored within the base section of the manhole, but allow for two (2) feet of clearance/standing room below the invert.

Inverts of all the sewer manholes are shown upon the plan set and shall be cored and booted, to receive the specified pipe. The Contractor is responsible for field verifying the invert before ordering the structure, based upon the location of the proposed structure.

Measurement and payment for manhole base shall be per each manhole base set in field.

Item 89: 48” Diameter Sewer Manhole - Riser Section

This work shall consist of the furnishing and installation of a new forty eight (48) inch inside diameter sewer manhole riser sections, as necessary, to conform to the newly proposed lines and grades for the structure as specified or as directed by the Engineer.

The riser section shall be precast by Shea Concrete Products, or approved equal, and capable of fitting with the base and top sections.
The manhole riser section shall be made of a precast concrete, casted off site and transported to the site, and capable of withstanding an H-20 wheel loading capacity. Proof of which can be requested by the Engineer, before acceptance and installation of the material.

Measurement and payment for manhole riser section shall be per each manhole riser section set in field.

**Item 89: 48” Diameter Sewer Manhole Conical Top**

This work shall consist of the furnishing and installation of a new forty eight (48) inch inside diameter sewer manhole conical top with a standard twenty four (24) inch diameter opening, and have a minimum thickness of one (1) foot, to conform to the newly proposed lines and grades for the structure as specified or as directed by the Engineer.

The manhole top shall be precast by Shea Concrete Products, or approved equal, and capable of fitting with the base and riser sections.

The manhole top shall be made of a precast concrete, casted off site and transported to the site, and capable of withstanding an H-20 wheel loading capacity. Proof of which can be requested by the Engineer, before acceptance and installation of the material.

Measurement and payment for manhole top shall be per each manhole top set in field.

**Item 91: Frame and Grate (or Cover) Municipal Standard**

This work shall consist of the furnishing and installation, by the Contractor, of any drain manhole frame and covers, sewer manhole frame and covers, water manhole frame and covers, and catch basin frame and grates.

All catch basin frame and covers must be Neenah Foundry product number R-3589-A or equivalent American made equal. All manhole frames and covers shall be Neenah Foundry product number R-1720 or East Jordan Iron Works product number 00211211 (frame) and product number 00211044CO1 (cover) or equivalent American made equal. Covers must have the appropriate utility name casted into it (i.e. “Drain”, “Sewer” and “Water”). Each frame and cover or frame and grate supplied MUST be capable of spanning the required opening of the structure of which said cover will go on.

This bid item will cover the price for the Contractor to purchase, furnish, and deliver to the job site, the castings ranging in size from four (4) inch castings to eight (8) inch castings, as necessary.

Measurement and payment for this item will be made based on the actual number of purchased frame and grates (or covers) and actually installed in the field. Any over ordered frame and grates (or covers) not used as part of the project will NOT be paid for.
under this bid item, and said extra frame and grates (or covers) will remain the property of the Contractor. Once a frame and grate (or cover) purchased by the Contractor is installed in the field and accepted by the Owner, the frame and grate (or cover) will become the property of the Town of Burlington. Considered incidental to this bid item will be the adjustment by masonry red brick and mortar to adjust the casting the proposed line and grade as necessary.

**Item 92: Frame and Grate (or Cover) Removed and Disposed**

This work shall consist of the removal and disposal of all existing frame and grates (or covers), that have been directed to be removed and disposed of in the field by the Engineer.

Once a casting is removed, and a new casting is put back, the old casting will become the responsibility of the Contractor to remove and dispose of at an offsite location, and in a legal manner.

In the event that the existing casting has not been removed and disposed of within a two (2) week period, after the permanent casting has been installed, the Contractor forfeits the right to seek payment for this bid item, as set for the Bid Form, and the disposal will be considered incidental to the bid item.

Additionally the Owner may reserve the right to have said forfeited castings remaining after the deadline, disposed of by alternative methods. The owner also reserves the right to back charge the Contractor for any incurred cost associated with having to dispose of any frame and grate (or cover) not disposed of by the Contractor in the timeframe specified under this item.

Measurement and payment for this item will be made based each unit; a unit consists of one frame and cover or one frame and grate, actually disposed of by the Contractor in an offsite legal manner, within the timeframe specified under this item.

**Item 93: 12” Krohne Waterflux 3070 Water Meter**

This work shall consist of the installation of a twelve (12) inch Krohne Waterflux 3070 Electromagnetic water meter with Neptune E-Coder Gallon, AMR Output capacity, manufactured by Neptune Tec in the proposed meter pit to the proposed line and grade, as shown upon the plan set or as directed by the Engineer.

The meter shall be manufactured by Neptune Technology Group, Inc. NO other approved or equal meters will be allowed for purposes of standardization within the Town of Burlington. Contactor “or equal” submissions will not be permitted for this bid item.

Product specifications for this specific meter are available in Appendix C of this document.

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*19C-411-0042 (7382)*

*Thursday, July 30, 2020 at 10:00 A.M.*

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Measurement and payment for this item will be made based each Krohne Waterflux 3070 Water Meter with Neptune E-Coder Gallon, AMR Output capacity, actually set in the field.

**Item 94: 2” P.V.C. Electrical Conduit – Schedule 40**

This work shall consist of the installation of two (2) inch P.V.C. schedule 40 conduit pipe rated for electrical use, installed in the field as shown upon the plan set, or as directed by the Engineer. The conduit shall be brought from the meter pit, off the paved road surface, a sufficient distance, as determined by the Engineer, to allow for future connection and prevent damage/excavation of the paved surface of Adams Street.

Measurement and payment for this item will be based upon the actual linear footage of two (2) inch conduit set and measured in the field.

**Item 95: 6” P.V.C. – SDR-35 Sewer Pipe**

This work shall consist of the installation of six (6) inch P.V.C. – SDR-35 sewer pipe, installed in the field as shown upon the plan set, or as directed by the Engineer.

The pipe shall connect the into the sewer manholes as shown upon the plan set.

Measurement and payment for this item will be based upon the actual linear footage of six (6) inch P.V.C. – SDR-35 sewer pipe set and measured in the field.

**Item 96: 8” P.V.C. – SDR-35 Sewer Pipe**

This work shall consist of the installation of eight (8) inch P.V.C. – SDR-35 sewer pipe, installed in the field as shown upon the plan set, or as directed by the Engineer.

The pipe shall connect the into the sewer manholes as shown upon the plan set.

Measurement and payment for this item will be based upon the actual linear footage of eight (8) inch P.V.C. – SDR-35 sewer pipe set and measured in the field.
APPENDIX A

Town of Lexington Conservation Commission Order of Conditions
March 4, 2020

Stephen Hildreth
Town of Burlington Engineering Division
25 Center Street
Burlington, Massachusetts 01803

Re: *Determination of Applicability CDOA-20-4*
Address – *Adams Street, RDA*

Please find enclosed the original signed Determination of Applicability issued by the Lexington Conservation Commission for the above-referenced project. The permit is available for viewing online on Lexington's Online Permit System, ViewPoint Cloud Record #CDOA-20-4. Please read this document carefully and note the conditions to be complied with that are included as part of the Determination.

If you have any questions regarding the requirements of this Permit, please contact me. Thank you.

For the Commission,

Katie Luczai
Conservation Department Assistant
A. General Information

From:
Lexington
Conservation Commission

To: Applicant
Property Owner (if different from applicant):

Town of Burlington Engineering Division
Name
25 Center Street
Mailing Address
Burlington MA 01803
City/Town State Zip Code

1. Title and Date (or Revised Date if applicable) of Final Plans and Other Documents:

Site Plan, "Adams Street Water Main", prepared by Town of Burlington Engineering Dept., signed and stamped by Stephen Hildreth

Title
Date
Title
Date
Title
Date

2. Date Request Filed:

1/7/2020

B. Determination

Pursuant to the authority of M.G.L. c. 131, § 40, the Conservation Commission considered your Request for Determination of Applicability, with its supporting documentation, and made the following Determination.

Project Description (if applicable):

Construction of a new twenty four (24) inch water main, from the intersection of Adams Street and North Street, to the Lexington/Burlington Town line.

Project Location:

Adams Street
Street Address
69
Assessors Map/Plat Number

Lexington
City/Town
100B
Parcel/Lot Number
B. Determination (cont.)

The following Determination(s) is/are applicable to the proposed site and/or project relative to the Wetlands Protection Act and regulations:

Positive Determination

Note: No work within the jurisdiction of the Wetlands Protection Act may proceed until a final Order of Conditions (issued following submittal of a Notice of Intent or Abbreviated Notice of Intent) or Order of Resource Area Delineation (issued following submittal of Simplified Review ANRAD) has been received from the issuing authority (i.e., Conservation Commission or the Department of Environmental Protection).

☐ 1. The area described on the referenced plan(s) is an area subject to protection under the Act. Removing, filling, dredging, or altering of the area requires the filing of a Notice of Intent.

☐ 2a. The boundary delineations of the following resource areas described on the referenced plan(s) are confirmed as accurate. Therefore, the resource area boundaries confirmed in this Determination are binding as to all decisions rendered pursuant to the Wetlands Protection Act and its regulations regarding such boundaries for as long as this Determination is valid.

☐ 2b. The boundaries of resource areas listed below are not confirmed by this Determination, regardless of whether such boundaries are contained on the plans attached to this Determination or to the Request for Determination.

☐ 3. The work described on referenced plan(s) and document(s) is within an area subject to protection under the Act and will remove, fill, dredge, or alter that area. Therefore, said work requires the filing of a Notice of Intent.

☐ 4. The work described on referenced plan(s) and document(s) is within the Buffer Zone and will alter an Area subject to protection under the Act. Therefore, said work requires the filing of a Notice of Intent or ANRAD Simplified Review (if work is limited to the Buffer Zone).

☐ 5. The area and/or work described on referenced plan(s) and document(s) is subject to review and approval by:

Name of Municipality

Pursuant to the following municipal wetland ordinance or bylaw:

Name

Ordinance or Bylaw Citation
B. Determination (cont.)

☐ 6. The following area and/or work, if any, is subject to a municipal ordinance or bylaw but not subject to the Massachusetts Wetlands Protection Act.

☐ 7. If a Notice of Intent is filed for the work in the Riverfront Area described on referenced plan(s) and document(s), which includes all or part of the work described in the Request, the applicant must consider the following alternatives: (Refer to the wetland regulations at 10.58(4)c. for more information about the scope of alternatives requirements):

☐ Alternatives limited to the lot on which the project is located.

☐ Alternatives limited to the lot on which the project is located, the subdivided lots, and any adjacent lots formerly or presently owned by the same owner.

☐ Alternatives limited to the original parcel on which the project is located, the subdivided parcels, any adjacent parcels, and any other land which can reasonably be obtained within the municipality.

☐ Alternatives extend to any sites which can reasonably be obtained within the appropriate region of the state.

Negative Determination

Note. No further action under the Wetlands Protection Act is required by the applicant. However, if the Department is requested to issue a Superseding Determination of Applicability, work may not proceed on this project unless the Department fails to act on such request within 35 days of the date the request is post-marked for certified mail or hand delivered to the Department. Work may then proceed at the owner’s risk only upon notice to the Department and to the Conservation Commission. Requirements for requests for Superseding Determinations are listed at the end of this document.

☒ 1. The area described in the Request is not an area subject to protection under the Act or the Buffer Zone.

☐ 2. The work described in the Request is within an area subject to protection under the Act, but will not remove, fill, dredge, or alter that area. Therefore, said work does not require the filing of a Notice of Intent.

☐ 3. The work, or portions of it, described in the Request is within the Buffer Zone, as defined in the regulations, but will not alter an Area subject to protection under the Act. Therefore, said work does not require the filing of a Notice of Intent, subject to the following conditions (if any).

☐ 4. The work described in the Request is not within an Area subject to protection under the Act (including the Buffer Zone). Therefore, said work does not require the filing of a Notice of Intent, unless and until said work alters an Area subject to protection under the Act.
B. Determination (cont'd)

☐ 5. The area described in the Request is subject to protection under the Act. Since the work described therein meets the requirements for the following exemption, as specified in the Act and the regulations, no Notice of Intent is required:

Exempt Activity (site applicable statutory/regulatory provisions)

☐ 6. The area and/or work described in the Request is subject to review and approval by:

Town of Lexington
Name of Municipality

Pursuant to a municipal wetlands ordinance or bylaw.

Wetlands Protection Code C 130
Name

Ordinance or Bylaw Citation

But, the work is approved here in under this Negative Determination subject to the attached conditions beginning on page 4-1.

C. Authorization

This Determination is issued to the applicant and delivered as follows:

☐ by hand delivery on

☐ by certified mail, return receipt requested on

Date       Date

This Determination is valid for three years from the date of issuance (except Determinations for Vegetation Management Plans which are valid for the duration of the Plan). This Determination does not relieve the applicant from complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.

This Determination must be signed by a majority of the Conservation Commission. A copy must be sent to the appropriate DEP Regional Office (see http://www.mass.gov/dep/about/region/finyour.htm) and the property owner (if different from the applicant).

Signatures:

Philip Hamilton
Ruth Lane
Holly Samuels
Ralph (Duke) Bitsko

Kevin Beutell
David Langseth
Alex Dohan

2/10/2020
Date
**CONDITIONS:**

1. All work shall conform to the Request for Determination of Applicability, the referenced plans, and supporting documentation unless, otherwise, specified in this Determination.

2. A copy of this Determination, as well as construction plans, shall be on site at the start of and during any site work for contractors to use as reference. The property owner(s) and any successor(s) in title shall inform all contractors and subcontractors of the conditions and provisions of this Determination concerning their work. This Determination shall be included in all construction contracts, subcontracts, and any other construction documents dealing with the proposed work and shall supersede any conflicting contract requirements.

3. In conjunction with the transfer of interest or control of any part of the site, the applicant shall provide a copy of this Determination and Approved Site Plan to any broker, potential buyer or lessee of the property. If the lot is sold before the Certificate of Compliance is issued, a statement acknowledging an understanding of this Determination and agreeing to comply with it shall be signed by the buyer and submitted to the Commission.

4. Prior to commencing any work on the property, the applicant shall comply with the following conditions:
   
   a. Install erosion and sedimentation control devices as directed by the Conservation Director to serve as the erosion control barrier. The devices shall consist of silt sacks with emergency overflow bypass in catch basins within work limits and just downslope and 12-inch silt sock filled with compost (i.e. filtrexx compost sock), immediately adjacent to the downslope limit of disturbance boundary adjacent to wetland resource areas in accordance with the approved plan location or as directed by the Conservation Director;

   b. Identify and demarcate the construction equipment and materials staging and storing and stockpiling area(s) for the Conservation Director’s approval. If deemed necessary by the Director, install pollution prevention or boundary limit measures as directed;

   c. Submit the following information in writing to the Conservation Office:
      1) The names, addresses, and day and night numbers of the project supervisor/manager/ and their alternates who will be responsible for ensuring on-site compliance with this Determination; and
      2) A construction sequencing schedule that outlines the pipe installation schedule/time frame;

   d. Schedule a pre-construction meeting with the Conservation Office for the purpose of reviewing the requirements of the Determination and to inspect the erosion control barrier, silt sacks, staging, stockpiling, and storage area(s), and limit of work boundary installation. The applicant, the owner and the project supervisor/manager who will be responsible for ensuring on-site compliance with this Determination shall attend this meeting.
5. The following conditions shall be complied with to protect the wetland resource areas:

a. If any unforeseen problems occur during construction that affects any of the interests of the Act or the Lexington General Bylaw for Wetland Protection, upon discovery, the owner(s) shall notify the Commission. An immediate meeting shall be held between the Commission, the applicant, the engineer, the contractor, and other concerned parties to determine the corrective measures to be employed. The applicant shall then act to correct the problems using the corrective measures agreed upon;

b. Any dewatering activities associated with the project shall make use of a sediment settling device, such as a roll off frac tank, to remove sediment before the water is released. The Commission shall approve the dewatering device specifications and placement location prior to commencing any dewatering.

c. As soon as possible, all disturbed upland areas shall be brought to final grade, and shall be permanently stabilized within 30 days after disturbance by previous existing surface such as pavement or loam and seeding or other measures acceptable to the Commission. Where necessary, the loam and seeding shall be held in place with biodegradable erosion control matting. Bare ground and disturbed areas that cannot be permanently revegetated within thirty (30) days, unless the 30 days are in the winter, shall be stabilized by a method approved by the Commission. Temporary stabilization shall include, but not be limited to, hydro-seeding, straw mats, erosion control blankets, sod, or other Commission approved method. Erosion control devices shall remain in place until the Conservation Commission or designee grants approval to remove;

d. All storage and stockpiling of materials shall be performed in an upland area at a horizontal distance greater than 200 feet from the mean annual high water line and 100 feet from the boundary of wetlands and bordering land subject to flooding and removed from the project work area at the end of each day and stored in a non-jurisdictional wetland area off-site until disposed of in a legal manner.

6. If applicable, disposal records (bills of lading) of all materials removed from the site shall be kept and shall be made available to the Conservation Commission upon request.

7. Storing, servicing, or cleaning of trucks or equipment, including but not limited to fueling, changing, adding or applying lubricants or hydraulic fluids, or washing/rinsing of trucks or equipment, shall be performed in an upland area at a horizontal distance greater than 200 feet from the mean annual high water line and 100 feet from the boundary of wetlands and bordering land subject to flooding.
8. No filling and/or grade changes are permitted by this Determination and disturbed areas shall be returned to pre-existing conditions. Any surplus soils not necessary for backfilling of trenches shall be removed from the site and disposed of in a legal manner;

9. Any modifications/changes to the approved referenced plan, no matter where the modifications/changes are located or how minor in nature in the opinion of the engineer/contractor, the proposed modifications/changes shall be presented to the Commission for review and approval prior to implementation on site.

10. Upon completion of the project, an as-built plan certifying the water line and connection location shall be submitted and the Conservation Office shall be contacted to schedule an onsite meeting with staff to review compliance with this Determination.
D. Appeals

The applicant, owner, any person aggrieved by this Determination, any owner of land abutting the land upon which the proposed work is to be done, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate Department of Environmental Protection Regional Office (see http://www.mass.gov/dep/about/region.findyour.htm) to issue a Superseding Determination of Applicability. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and Fee Transmittal Form (see Request for Departmental Action Fee Transmittal Form) as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Determination. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant if he/she is not the appellant. The request shall state clearly and concisely the objections to the Determination which is being appealed. To the extent that the Determination is based on a municipal ordinance or bylaw and not on the Massachusetts Wetlands Protection Act or regulations, the Department of Environmental Protection has no appellate jurisdiction.
A. Request Information

1. Person or party making request (if appropriate, name the citizen group's representative):

   Name

   Mailing Address

   City/Town

   Phone Number

   Project Location

   Mailing Address

   City/Town

   Phone Number

2. Applicant (as shown on Notice of Intent (Form 3), Abbreviated Notice of Resource Area Delineation (Form 4A); or Request for Determination of Applicability (Form 1)):

   Name

   Mailing Address

   City/Town

   Phone Number

3. DEP File Number:

B. Instructions

1. When the Departmental action request is for (check one):

   [ ] Superseding Order of Conditions ($100 for individual single family homes with associated structures: $200 for all other projects)

   [ ] Superseding Determination of Applicability ($100)

   [ ] Superseding Order of Resource Area Delineation ($100)

Send this form and check or money order for the appropriate amount, payable to the Commonwealth of Massachusetts to:

   Department of Environmental Protection
   Box 4062
   Boston, MA 02211
B. Instructions (cont.)

2. On a separate sheet attached to this form, state clearly and concisely the objections to the Determination or Order which is being appealed. To the extent that the Determination or Order is based on a municipal bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

3. Send a copy of this form and a copy of the check or money order with the Request for a Superseding Determination or Order by certified mail or hand delivery to the appropriate DEP Regional Office (see http://www.mass.gov/dep/about/region/findyour.htm).

4. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.
APPENDIX B

Town of Burlington Conservation Commission Order of Conditions
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 2 – Determination of Applicability
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. General Information

From:
Burlington
Conservation Commission

To:
Applicant
Stephen Hildreth, Engineering Division

Property Owner (if different from applicant):
Name: Town of Burlington

1. Title and Date (or Revised Date if applicable) of Final Plans and Other Documents:

   SEE ATTACHED PAGE ARTICLE XIV-1

2. Date Request Filed:
   January 10, 2020

B. Determination

Pursuant to the authority of M.G.L. c. 131, § 40, the Conservation Commission considered your Request for Determination of Applicability, with its supporting documentation, and made the following Determination.

Project Description (if applicable):
Install water main

Project Location:
28 Adams Street
Burlington

Street Address
City/Town

Assessors Map/Plat Number
Parcel/Lot Number

01803
31-0
The following Determination(s) is/are applicable to the proposed site and/or project relative to the Wetlands Protection Act and regulations:

Positive Determination
Note: No work within the jurisdiction of the Wetlands Protection Act may proceed until a final Order of Conditions (issued following submittal of a Notice of Intent or Abbreviated Notice of Intent) or Order of Resource Area Delineation (issued following submittal of Simplified Review ANRAD) has been received from the issuing authority (i.e., Conservation Commission or the Department of Environmental Protection).

☐ 1. The area described on the referenced plan(s) is an area subject to protection under the Act. Removing, filling, dredging, or altering of the area requires the filing of a Notice of Intent.

☐ 2a. The boundary delineations of the following resource areas described on the referenced plan(s) are confirmed as accurate. Therefore, the resource area boundaries confirmed in this Determination are binding as to all decisions rendered pursuant to the Wetlands Protection Act and its regulations regarding such boundaries for as long as this Determination is valid.

☐ 2b. The boundaries of resource areas listed below are not confirmed by this Determination, regardless of whether such boundaries are contained on the plans attached to this Determination or to the Request for Determination.

☐ 3. The work described on referenced plan(s) and document(s) is within an area subject to protection under the Act and will remove, fill, dredge, or alter that area. Therefore, said work requires the filing of a Notice of Intent.

☐ 4. The work described on referenced plan(s) and document(s) is within the Buffer Zone and will alter an Area subject to protection under the Act. Therefore, said work requires the filing of a Notice of Intent or ANRAD Simplified Review (if work is limited to the Buffer Zone).

☒ 5. The area and/or work described on referenced plan(s) and document(s) is subject to review and approval by:

Burlington Conservation Commission
Name of Municipality

Pursuant to the following municipal wetland ordinance or bylaw:

Burlington Wetland By-Law
Name

Article 14
Ordinance or Bylaw Citation
B. Determination (cont.)

☐ 6. The following area and/or work, if any, is subject to a municipal ordinance or bylaw but not subject to the Massachusetts Wetlands Protection Act:


☐ 7. If a Notice of Intent is filed for the work in the Riverfront Area described on referenced plan(s) and document(s), which includes all or part of the work described in the Request, the applicant must consider the following alternatives. (Refer to the wetland regulations at 10.58(4)c. for more information about the scope of alternatives requirements):

☐ Alternatives limited to the lot on which the project is located.

☐ Alternatives limited to the lot on which the project is located, the subdivided lots, and any adjacent lots formerly or presently owned by the same owner.

☐ Alternatives limited to the original parcel on which the project is located, the subdivided parcels, any adjacent parcels, and any other land which can reasonably be obtained within the municipality.

☐ Alternatives extend to any sites which can reasonably be obtained within the appropriate region of the state.

Negative Determination
Note: No further action under the Wetlands Protection Act is required by the applicant. However, if the Department is requested to issue a Superseding Determination of Applicability, work may not proceed on this project unless the Department fails to act on such request within 35 days of the date the request is post-marked for certified mail or hand delivered to the Department. Work may then proceed at the owner’s risk only upon notice to the Department and to the Conservation Commission.

Requirements for requests for Superseding Determinations are listed at the end of this document.

☐ 1. The area described in the Request is not an area subject to protection under the Act or the Buffer Zone.

☐ 2. The work described in the Request is within an area subject to protection under the Act, but will not remove, fill, dredge, or alter that area. Therefore, said work does not require the filing of a Notice of Intent.

☒ 3. The work described in the Request is within the Buffer Zone, as defined in the regulations, but will not alter an Area subject to protection under the Act. Therefore, said work does not require the filing of a Notice of Intent, subject to the following conditions (if any).

See attached

☐ 4. The work described in the Request is not within an Area subject to protection under the Act (including the Buffer Zone). Therefore, said work does not require the filing of a Notice of Intent, unless and until said work alters an Area subject to protection under the Act.
B. Determination (cont.)

☐ 5. The area described in the Request is subject to protection under the Act. Since the work described therein meets the requirements for the following exemption, as specified in the Act and the regulations, no Notice of Intent is required:

Exempt Activity (site applicable statuatory/regulatory provisions)

☐ 6. The area and/or work described in the Request is not subject to review and approval by:

Name of Municipality

Pursuant to a municipal wetlands ordinance or bylaw.

ARTICLE XIV

Name

Ordinance or Bylaw Citation

C. Authorization

This Determination is issued to the applicant and delivered as follows:

☑ by hand delivery on

February 14, 2020

by certified mail, return receipt requested on

Date

This Determination is valid for three years from the date of issuance (except Determinations for Vegetation Management Plans which are valid for the duration of the Plan). This Determination does not relieve the applicant from complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.

This Determination must be signed by a majority of the Conservation Commission. A copy must be sent to the appropriate DEP Regional Office (see http://www.mass.gov/eea/agencies/massdep/about/contacts/find-the-massdep-regional-office-for-your-city-or-town.html) and the property owner (if different from the applicant).

Signatures:

Larry Cohen

William Boivin

Indra Deb

John Ramsdell

Gail Uma

Ed LoTurco

Jennifer O’Riorden

Date:
D. Appeals

The applicant, owner, any person aggrieved by this Determination, any owner of land abutting the land upon which the proposed work is to be done, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate Department of Environmental Protection Regional Office (see http://www.mass.gov/eea/agencies/massdep/about/contacts/find-the-massdep-regional-office-for-your-city-or-town.html) to issue a Superseding Determination of Applicability. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and Fee Transmittal Form (see Request for Departmental Action Fee Transmittal Form) as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Determination. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant if he/she is not the appellant. The request shall state clearly and concisely the objections to the Determination which is being appealed. To the extent that the Determination is based on a municipal ordinance or bylaw and not on the Massachusetts Wetlands Protection Act or regulations, the Department of Environmental Protection has no appellate jurisdiction.
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
Request for Departmental Action Fee
Transmittal Form
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. Request Information

1. Location of Project
   - Street Address
   - City/Town, Zip
   - Check number
   - Fee amount

2. Person or party making request (if appropriate, name the citizen group's representative):
   - Name
   - Mailing Address
   - City/Town
   - State
   - Zip Code
   - Phone Number
   - Fax Number (if applicable)

3. Applicant (as shown on Determination of Applicability (Form 2), Order of Resource Area Delineation (Form 4B), Order of Conditions (Form 5), Restoration Order of Conditions (Form 5A), or Notice of Non-Significance (Form 6)):
   - Name
   - Mailing Address
   - City/Town
   - State
   - Zip Code
   - Phone Number
   - Fax Number (if applicable)

4. DEP File Number:

B. Instructions

1. When the Departmental action request is for (check one):
   - Superseding Order of Conditions – Fee: $120.00 (single family house projects) or $245 (all other projects)
   - Superseding Determination of Applicability – Fee: $120
   - Superseding Order of Resource Area Delineation – Fee: $120

Send this form and check or money order, payable to the Commonwealth of Massachusetts, to:

Department of Environmental Protection
Box 4062
Boston, MA 02211
B. Instructions (cont.)

2. On a separate sheet attached to this form, state clearly and concisely the objections to the Determination or Order which is being appealed. To the extent that the Determination or Order is based on a municipal bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

3. Send a copy of this form and a copy of the check or money order with the Request for a Superseding Determination or Order by certified mail or hand delivery to the appropriate DEP Regional Office (see [http://www.mass.gov/eea/agencies/massdep/about/contacts/](http://www.mass.gov/eea/agencies/massdep/about/contacts/)).

4. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.
MGL CHAPTER 131, SEC. 40
DETERMINATION OF APPLICABILITY

APPLICANT: Town of Burlington, Engineering Division
ADDRESS: 25 Center Street
Burlington, MA 01803

PROJECT LOCATION: 28 Adams Street (paved ROW)
Burlington, MA 01803

BURLINGTON ASSESSORS MAP-PARCELS: 59-31-0

PROPERTY OWNER: Town of Burlington
ADDRESS: 29 Center Street
Burlington, MA 01803

DATE OF DECISION: February 13, 2020

FINDINGS

Project Description: A new twenty four inch water main will be installed within the Adams Street right-of-way, extending from the Burlington/Lexington Town Line to the Middlesex Turnpike.

Plan Reference:

Jurisdictional Areas: The work would be within riverfront area – inner 100 feet (Burlington Bylaw only) and the 100-foot buffer zone to bordering vegetated wetlands.

The Commission finds that, while FEMA maps indicate the area is within bordering land subject to flooding, the Applicant has certified elevations showing the work is above the floodplain elevation. Additionally, the Commission finds that work within the locally-regulated riverfront area would all be within paved roadway, and thus will not alter the functions and values of the resource area. Because work would be within paved roadway, the Commission waived the requirement for an alternatives analysis.
Determination of Applicability – Adams Street ROW
Town of Burlington, Engineering; Applicant
February 18, 2020

DECISION

The Burlington Conservation Commission voted to issue a Negative Determination of Applicability with conditions as noted in this decision for work at 28 Adams Street in Burlington, MA. The conditions have been imposed to protect the wetlands and streams from any impact that may result from the proposed work and to assure that the activity will not increase flooding on the properties of others.

CONDITIONS

1. This decision is for the installation of a new twenty four inch water main within the Adams Street right-of-way, extending from the Burlington/Lexington Town Line to the Middlesex Turnpike. No other work is approved under this Determination.

2. Prior to beginning any other construction on the site, sediment barriers shall be installed and then inspected by Conservation Department staff. Staked hay bales or straw wattles shall be used as a sediment barrier on this site and shall be installed by hand between the work area and the wetlands. The sediment barriers shall remain in place while the work is being done and until all disturbed areas have been permanently stabilized.

3. No trees are to be removed under this Determination.

4. There shall be no increase in impervious area under this Determination.

5. There shall be no filling or change of elevation/grade within the floodplain under this Determination.

6. Although dewatering is not anticipated, if dewatering of the site is needed, a plan shall be submitted prior to this activity to the Agent of the Commission for approval. Any dewatering activities shall make use of a settling pond, filter bag or similar device to remove sediment before the water is removed offsite.

7. Any excavated materials not reused on site shall be disposed of off-site in a legal manner. No material (asphalt, concrete, soil, etc.) shall be deposited within wetland, riverfront area or floodplain. The applicant shall submit verification to the Conservation Commission that all materials were disposed of off-site in a legal manner.

8. No stockpiling, refueling, or overnight parking of trucks shall be permitted within 50 feet of wetlands.

9. Members of the Burlington Conservation Commission and/or their designated representatives shall have the right to enter upon and inspect the premises to evaluate compliance with these conditions, and to require additional erosion controls as deemed necessary.
Burlington By-laws Article 14
Determination of Applicability
28 Adams Street  Map 59, Parcel 31-0
Applicant: Stephen Hildreth, Town of Burlington Engineering Division
Date: February 18, 2020

ISSUED BY BURLINGTON CONSERVATION COMMISSION:

Larry Cohen

Indra Deb

William Boivin

Jennifer O’Riorden
APPENDIX C

Krohne Waterflux 3070 Product Information
## TECHNICAL SPECIFICATIONS
Technical performance specifications for the WaterFlux 3070.

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Flanges</td>
<td>ANSI 150 lb.</td>
</tr>
<tr>
<td>Pressure</td>
<td>Sizes 2&quot;-8&quot;: 230 PSI</td>
</tr>
<tr>
<td></td>
<td>Sizes 10&quot;-24&quot;: 150 PSI</td>
</tr>
<tr>
<td>Temperature</td>
<td>Operating: +15°F to +149°F (-10°C to +65°C)</td>
</tr>
<tr>
<td></td>
<td>Storage: -40°F to +158°F (-40°C to +70°C)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>Size (inches)</td>
</tr>
<tr>
<td></td>
<td>Low Flow (&gt;95%) GPM</td>
</tr>
<tr>
<td></td>
<td>Normal Operating (100 +/- 1.5%) GPM</td>
</tr>
<tr>
<td>2</td>
<td>0.4</td>
</tr>
<tr>
<td>3</td>
<td>0.7</td>
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<tr>
<td>4</td>
<td>1.3</td>
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<td>6</td>
<td>3</td>
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<td>8</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>16</td>
<td>65</td>
</tr>
<tr>
<td>20</td>
<td>101</td>
</tr>
<tr>
<td>24</td>
<td>105</td>
</tr>
<tr>
<td>Materials</td>
<td>Body: Polyurethane-coated Carbon Steel</td>
</tr>
<tr>
<td></td>
<td>Liner: Rilsan®</td>
</tr>
<tr>
<td></td>
<td>Electronics Housing: IP68 Polycarbonate</td>
</tr>
<tr>
<td></td>
<td>Electrodes: Hastelloy C22 (optional) or 304 Stainless Steel (standard).</td>
</tr>
<tr>
<td>Display</td>
<td>Rate</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Digits</td>
<td>8</td>
</tr>
<tr>
<td>Units</td>
<td>Gallons/Minute Gallons</td>
</tr>
<tr>
<td></td>
<td>Liters/Minute Cubic Meters</td>
</tr>
<tr>
<td></td>
<td>Gallons/Minute Cubic Feet</td>
</tr>
<tr>
<td></td>
<td>Gallons/Minute Imperial Gallons</td>
</tr>
<tr>
<td>Power</td>
<td>Battery: 2 D-Cell Lithium</td>
</tr>
<tr>
<td></td>
<td>External (2050 Model): 120 VAC (Not available on WaterFlux 3070)</td>
</tr>
<tr>
<td>Output</td>
<td>Signal: Pulse Output Standard</td>
</tr>
<tr>
<td></td>
<td>Pulse Rate: Size and Unit Dependent</td>
</tr>
<tr>
<td></td>
<td>Encoder: E-Coder 8-digit Protocol Only</td>
</tr>
<tr>
<td>Certifications</td>
<td>NSF 61: All Models</td>
</tr>
<tr>
<td></td>
<td>IP 68: All Models</td>
</tr>
</tbody>
</table>
**PRODUCT BID SPECIFICATIONS**

**Cold Water Meters/Magnetic Flowmeter Type**

**Indicates features unique to KROHNE WaterFlux 3070**

**General**
All meters furnished shall be manufactured by a registered ISO 9001 quality standard facility and meet the most recent NSF 61 certification requirements.

**Type**
Meters shall be of the magnetic flowmeter type.

**Capacity**
The capacity of the meters in terms of normal operating range, low flow, and maximum intermittent flow shall be as shown.

<table>
<thead>
<tr>
<th>Size</th>
<th>Normal Operating range (GPM)</th>
<th>Low Flow (GPM)</th>
<th>Maximum Intermittent Flow (GPM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1.2 to 320</td>
<td>0.4</td>
<td>400</td>
</tr>
<tr>
<td>3</td>
<td>2.5 to 720</td>
<td>0.7</td>
<td>900</td>
</tr>
<tr>
<td>4</td>
<td>5 to 1,250</td>
<td>1.3</td>
<td>1,562</td>
</tr>
<tr>
<td>6</td>
<td>11 to 2,850</td>
<td>3</td>
<td>3,562</td>
</tr>
<tr>
<td>8</td>
<td>19 to 5,100</td>
<td>5</td>
<td>6,375</td>
</tr>
<tr>
<td>10</td>
<td>31 to 8,000</td>
<td>8</td>
<td>10,000</td>
</tr>
<tr>
<td>12</td>
<td>44.5 to 11,500</td>
<td>12</td>
<td>14,375</td>
</tr>
<tr>
<td>16</td>
<td>237 to 20,500</td>
<td>65</td>
<td>25,625</td>
</tr>
<tr>
<td>20</td>
<td>370 to 32,100</td>
<td>101</td>
<td>40,125</td>
</tr>
<tr>
<td>24</td>
<td>385 to 33,400</td>
<td>105</td>
<td>41,750</td>
</tr>
</tbody>
</table>

**Size**
The size of the meter shall be determined by the nominal size (in inches) of the opening in the inlet and outlet flanges. Overall lengths of the meters shall be as follows.

<table>
<thead>
<tr>
<th>Meter Size</th>
<th>Laying Length (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>7.87</td>
</tr>
<tr>
<td>3</td>
<td>7.87</td>
</tr>
<tr>
<td>4</td>
<td>9.84</td>
</tr>
<tr>
<td>6</td>
<td>11.81</td>
</tr>
<tr>
<td>8</td>
<td>13.78</td>
</tr>
<tr>
<td>10</td>
<td>15.75</td>
</tr>
<tr>
<td>12</td>
<td>19.7</td>
</tr>
<tr>
<td>16</td>
<td>31.5</td>
</tr>
<tr>
<td>20</td>
<td>31.5</td>
</tr>
<tr>
<td>24</td>
<td>31.5</td>
</tr>
</tbody>
</table>
**Function / Performance**

**Ambient Operating Temperature:** +15°F to +149°F (-10°C to +65°C).

**Storage Temperature:** -40°F to +158°F (-40°C to +70°C).

**Pressure Rating:** Suitable for use up to 230 PSI (sizes 2”-8”). Suitable for use up to 150 PSI (sizes 10”-24”).

**Absolute Encoder Output:** The unit shall provide to the remote reading equipment an 8-digit meter reading, using standard Neptune E-Coder protocol.

**Rate Display:** Meter shall display rate in GPM or LPM.

**Flow Totalizer:** Units of volume must be available in gallons, imperial gallons, cubic feet, and cubic meters.

**Empty Pipe Performance:** The meter must display when the pipe is empty and the meter must be able to remain empty for an indefinite period of time without affecting the meter or the meter performance.

**Flow Measurement:** The meter must sample the water at least every 15 seconds to gain an accurate measurement while maintaining adequate battery life.

**Pulse Rate:** The meter must be capable of providing a pulse output to a third party device. The pulse output shall have the following characteristics: pulse width 5 ms; f<=100 Hz; i<=10mA; V=2.7...24VDC; p<=100mW.

**Low-Battery Warning:** The meter must be capable of providing a low battery warning when remaining battery capacity is less than 10%. The meter must be capable of providing an additional “high” warning when the battery capacity is less than 1%.

**Forward and Reverse Flow:** The meter must be capable of accurately meeting the same accuracy specifications in reverse flow as it does in forward flow. The meter must accurately display “net flow” by subtracting the reverse flow from the forward flow.

**Installation:** Meters 12” and smaller must not require any upstream or downstream straight runs of pipe for specified performance.

**Construction**

**Meter Tube:** The meter “tube” or measurement section must contain a Rilsan® liner to prevent corrosion from aggressive waters.

**Electrodes:** The electrodes shall be Hastelloy C22 (optional) or 304 stainless steel (standard).

**Grounding:** The meter must feature a reference electrode so that grounding rings are not required for adequate meter performance.

**Cross Section:** Meters 12” and smaller shall consist of a rectangular cross section to minimize flow obstruction and minimize the power needed to measure water flow.
**Meter Body:** The meter body shall be a polyurethane-coated carbon steel.

**Converter/Register:** The converter shall be integral to the meter body and be battery operated.

**IP68:** The meter must be IP68 approved whether the converter / register is connected to the flow tube remotely or integrally. IP68 construction shall be performed by the factory. No “field IP68” potting shall be acceptable.

**Power Requirements**
The meter shall be powered by two internal dual D-cell battery packs. The batteries shall be field replaceable.

**Accessories / Documentation**
All meters shall be calibrated by an internationally accredited flow calibration facility. Calibration shall be by direct volume comparison. Single meter calibration with transference of calibration factor will not be acceptable. Each meter shall be provided with its own calibration certificate.

**Connections**
Flanges shall be ANSI 150#.

**Converter / Register Display**
The converter / register shall be permanently sealed and should not need to be opened by the customer for any programming or maintenance. The display shall indicate flow rate in gallons or liters per minute. The display shall indicate accumulated volume in gallons, imperial gallons, cubic feet, or cubic meters.

**Meter Serial Number**
The meter serial number must be permanently engraved in the flange of the meter body.

**Meter Accuracy**
The meter shall be 100 +/- 1.5% accurate in the normal operating range. The meter shall be no less than 95% accurate at the listed extended low flow.
In the above example, this display would represent 39,060 cubic feet. The 8 digits on the display will be transmitted back through the radio. It is important that the customer understands a multiplier is present in the reading.
The display on the LCD will be dictated by meter size and units of measure. It will adhere to the following chart:

<table>
<thead>
<tr>
<th>Size</th>
<th>Least Digit on Display</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>m^3</td>
</tr>
<tr>
<td>2</td>
<td>0.01</td>
</tr>
<tr>
<td>3</td>
<td>0.01</td>
</tr>
<tr>
<td>4</td>
<td>0.01</td>
</tr>
<tr>
<td>6</td>
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<td>8</td>
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<td>20</td>
<td>1</td>
</tr>
<tr>
<td>24</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note, a unit with a least significant digit of 10 will have a X10 multiplier present on the display. A unit with a least significant digit of 100 will have a X100 multiplier present on the display. The multiplier will mimic E-Coder functionality and carry through to the N-Sight software.

The pulse output will also be dictated by units of measure and meter size. It will adhere to this chart:

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APPENDIX D

MassDEP Asbestos Cement Pipe Guidance Documents – July 2019
ASBESTOS CEMENT PIPE GUIDANCE DOCUMENT

July 2019

Prepared by the Bureau of Air & Waste
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I. Background
The Massachusetts Department of Environmental Protection’s (MassDEP’s) asbestos regulation (310 CMR 7.15) protects public health and the environment by establishing safe handling practices for demolishing or renovating buildings and structures to prevent the release of asbestos fibers from asbestos-containing materials (ACM). MassDEP’s regulations require notification as well as specific removal, handling, and disposal requirements for all ACM. These work practices include removing ACM prior to demolition or renovation activities, wetting the ACM before it is removed to prevent the release of asbestos dust, fully containing the work area (e.g., with plastic sheeting) and drawing air out of the containment through an air filtration unit equipped with a HEPA filter capable of capturing asbestos fibers, sealing the wetted Asbestos-Containing Waste Material (ACWM) in leak-tight containers with asbestos labeling, and properly disposing of the waste in a landfill permitted to accept ACM or ACWM.

Asbestos cement pipes often are found in underground utility conduits and municipal water, sewer and drainage systems. Asbestos cement pipes buried below ground are considered non-friable if they are in good condition. It should be noted that active asbestos cement pipe that is exposed and is not intended to be replaced or removed and is not disturbed by repair or replacement activities may remain in place and be backfilled.

II. Purpose
This guidance document is based on the requirements in 310 CMR 7.15(12A) and explains how to safely remove, repair and dispose of asbestos cement pipes that are repaired or replaced in underground system networks owned by public and private utilities (e.g. water, sewer, electricity and gas). Its main purpose is to prevent the release of asbestos fibers into ambient air and to protect public health, safety, and the environment while removing, repairing and disposing of asbestos cement pipes.

This guidance document summarizes the requirements for underground asbestos-cement pipe that is owned by public and private utilities (e.g., pipes conveying drinking water, sanitary sewage, storm water, electricity, and gas).

This guidance document and 310 CMR 7.15(12A) only applies to asbestos-cement pipe. If at any time the owner or operator determines that the pipe they are repairing or replacing is not asbestos-cement pipe, they must comply with the applicable requirements of 310 CMR 7.15.

This document does not constitute “final agency action,” and is not “regulation” as that term is used in M.G.L. c.30A. It may not be relied upon to create rights, duties, obligations or defenses, implied or otherwise, enforceable by any party in any administrative proceeding with the Commonwealth. In addition, this guidance does not exempt anyone from complying with any other applicable local, state or federal law.
including but not limited to: the United States Environmental Protection Agency (EPA) Asbestos National Emission Standards for Hazardous Air Pollutants (Asbestos NESHAP) regulation at 40 CFR part 61; the applicable United States Occupational Safety & Health Act (OSHA) standards at 29 CFR 1910 & 1926; and the Massachusetts Department of Labor Standards (DLS) regulation at 453 CMR 6.00.

III. Guidance Provisions

a. Pre-Demolition/Renovation Survey

MassDEP’s asbestos regulation establishes that owners and operators (including contractors) are responsible for determining whether cement pipe in a particular utility conduit that will be repaired or replaced contains asbestos before starting demolition or renovation.

The methods described below can only be used at underground asbestos-cement pipe repair/replacement work conducted by public and privately-owned utilities or their contractors. Owners and operators who are not public or private utilities are subject to the survey requirements at 310 CMR 7.15(4) by employing or engaging an asbestos inspector to thoroughly inspect the pipe, including sampling and analysis for the presence of asbestos using approved EPA protocol.

An owner or operator (including utilities conducting pipe repair or replacement), must conduct a “thorough inspection” to determine the location and amount of any asbestos-containing pipe. A “thorough inspection” under 310 CMR 7.15(12A) shall be satisfied by one of the following three options:

- **Document Review**: The owner or operator shall review as-built plans or other documents identifying the content of particular cement pipes or pipe segments and any other material in the conduit that may be affected by a removal or repair project, provided that the documentation has been updated to reflect any repairs or alterations. “Other documents” may include analytical results from bulk sampling and asbestos analysis using an EPA-approved method, a manufacturer’s Safety Data Sheet for the product as actually installed, or other irrefutable identifying information.

- **Visual Observation**: A person who has successfully completed a DLS-approved training course specific to asbestos cement pipe worker safety (e.g., the “8 hour OSHA Class II Asbestos Training: Asbestos Cement Pipe (ACP) Worker Safety” course) or another course similar in length and content that has been reviewed and approved in writing by DLS shall conduct a visual identification through field observations of the pipe to be worked on (e.g., the manufacturer’s brand-label markings indicating transite material or
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the source of the pipe).

- Presumption of Asbestos Containing Material: The owner or operator may presume that a pipe or pipe segment contains asbestos and manage any repairs or removals in accordance with this guidance and 310 CMR 7.15(12A).

If the pipe or pipe segment is not identified as asbestos cement pipe by one of the options listed above, then the owner or operator shall comply with the requirements of 310 CMR 7.15(4) by performing a survey if the pipe contains suspect asbestos-containing material.

The owner/operator of the utility system at which the asbestos cement pipe was removed, repaired or replaced must keep documentation of the pre-demolition/renovation survey, signed and dated by the person who conducted the inspection, for a minimum of two (2) years in the project file. The documentation must indicate what information was relied upon to determine whether the pipe contained asbestos. (See Attachment A for a Pre-Demolition/Renovation Survey Documentation template.)

b. Notification

A notification must be submitted to MassDEP for each asbestos-cement pipe project on an Asbestos Notification Form ANF-001/BWP AQ-04 in accordance with 310 CMR 7.15(6). The notification must be submitted at least ten (10) working days before starting asbestos cement pipe removal. The ANF-001/BWP AQ-04 and answers to frequently asked questions about filing notifications are available at: https://www.mass.gov/how-to/aq-04-anf-001-asbestos-removal-notification

The asbestos notification is filed online using MassDEP’s online notification system, eDEP: https://edep.dep.mass.gov/

If you cannot wait the requisite 10 working-day notification period prior to starting work, you will need to request an emergency waiver from the MassDEP regional office that covers the town in which the project is located. (See the response to question number 4 in the “Frequently Asked Questions” section of this guidance document for more details on how to obtain an emergency waiver.) The MassDEP staff person who approves an emergency waiver will provide a project-specific waiver number that must be entered on the notification form in the relevant field.

A notification fee, currently $100.00, is required when filing an ANF-001/BWP AQ-04. However, asbestos abatements at property owned by cities, towns, counties, districts of the Commonwealth, municipal housing authorities, federally recognized Indian tribe housing authorities, state agencies, the
Massachusetts Bay Transportation Authority, and owners of owner-occupied residential properties with four or fewer units are exempt from this fee.

Owners and operators who are planning to remove or repair several pipe segments over a specific period of time may apply to MassDEP for approval of a “blanket notification”, which would cover the entire project for a time period not to exceed one (1) year. While individual ANF-001/BW AQ-04 forms would still need to be submitted for each segment of the work, the blanket approval would eliminate the ten working day advance notification requirement for the individual filings. Information regarding asbestos blanket notifications may be found at:
https://www.mass.gov/how-to/aq-05-asbestos-blanket-notification-approval
An application fee of $200 is required for each application for a blanket notification approval.

c. Licensing and Training
DLS’s regulation (453 CMR 6.00) establishes requirements for the use of contractors and other asbestos specialists who are licensed or certified by that Department. Please call DLS for all licensing and training questions. Contact information can be found in the response to Question 28 in the attached Frequently Asked Questions.

In lieu of hiring a DLS-licensed asbestos contractor, an owner or operator conducting asbestos abatement activity on underground asbestos cement piping may hire contractors or other entities who have completed the “8 hour OSHA Class II Asbestos Training: Asbestos Cement Pipe (ACP) Worker Safety” course developed jointly by the MWWA and UCANE, or a course similar in length and content reviewed and approved in writing by DLS, provided that the owner, operator and contractor comply with the provisions and procedures described in this guidance document. To maintain one’s qualification, DLS requires that the contractor or other entity must complete 4-hour ACP Worker Safety Refresher Training at least every 5 years after the initial training.

d. Specific Work Practice Requirements for Underground Asbestos-Cement Pipe.

Owners/operators shall ensure the work practice standards listed below are followed:
1. Asbestos-cement pipe shall be handled in a manner that will minimize the risk of making it friable ACM or releasing asbestos dust into the environment.
2. At the start of work involving asbestos-cement pipe, owners/operators shall ensure that:
   a. The asbestos-cement pipe shall be exposed with minimal disturbance.
   b. Mechanical excavation shall not be used within six inches of the asbestos-cement pipe.
c. The soil within six inches of the asbestos-cement pipe shall be uncovered by hand or with a shovel.
d. Once the pipe has been exposed, an assessment shall be made before proceeding to determine whether the asbestos-cement pipe is damaged, cracked or broken to determine whether the requirements of Section III.d.3. or 4. (below) apply to the asbestos abatement activity.

3. If the assessment shows that the asbestos-cement pipe is intact and not deteriorated:
   a. Place 6 mil (0.006 inch) thick polyethylene sheeting under the asbestos cement pipe to prevent soil contamination.
   b. Adequately wet the asbestos-cement pipe with amended water using surfactant or liquid soap before and during removal to avoid creating airborne dust.
   c. Separate the asbestos cement pipe at the nearest coupling (bell or compression fitting).
   d. Slide the asbestos-cement pipe apart at the joints (no saw cutting) or use other methods that do not cause the asbestos-cement pipe to break, become friable ACM or otherwise create the potential to release asbestos fibers.
   e. Wrap wet asbestos cement pipe in two layers of 6 mil polyethylene sheeting, seal with duct tape and label (This may be done either in the trench or adjacent to the trench). Package any other asbestos-containing debris from the abatement in accordance with 310 CMR 7.15(7)(f)(3) – e.g., while wet, place debris in two plastic bags (six-mil minimum thickness each bag, one inside the other) or in leak-proof metal, plastic or plastic lined drums with locking lids.
   f. If the trench is filled with water, the placement of polyethylene sheeting is not required.

4. If the asbestos-cement pipe is deteriorated or is not intact, or when the use of mechanical breakage with saws, snap or blade cutting, and/or tapping is necessary:
   a. Place 6 mil (0.006 inch) thick polyethylene sheeting under the asbestos-cement pipe to prevent soil contamination.
   b. Adequately wet asbestos-cement pipe with amended water where cutting or breaking will occur.
   c. Saw cutting of asbestos-cement pipe shall only be conducted with a HEPA-shrouded vacuum attachment or wet cutting equipment, unless it is conducted within a small enclosure that isolates the area in which the saw cutting is being conducted to prevent the release of asbestos fibers to ambient air.
   d. Wrap wet asbestos cement pipe in two layers of 6 mil polyethylene sheeting, seal with duct tape and label (This may be done either in the trench or adjacent to the trench). Package any other asbestos-containing debris from the abatement in accordance with 310 CMR 7.15(7)(f)(3) – e.g., while wet, place debris in two plastic bags (six-mil minimum thickness each bag, one inside the other) or in leak-proof metal, plastic or plastic lined drums with locking lids.
5. For activities that disturb friable ACM, no visible emissions shall be discharged to the outside air during the collection, processing, packaging or transporting of any ACM or ACWM.
6. Refer to Section “III.e.” of this guidance document for packaging, labeling, disposal, and record retention requirements.

**e. Packaging, Labeling, Disposal and Record Retention**

All ACWM must be packaged, labeled, transported, stored and disposed of in accordance with requirements specified at 310 CMR 7.15(15): Asbestos-containing Waste Material Packaging Requirements, 310 CMR 7.15(16): Asbestos-containing Waste Material Transport Requirements, 310 CMR 7.15 (17): Asbestos-containing Waste Material Storage and Disposal Requirements, 310 CMR 7.15(18): Waste Shipment Records and Reports, and 310 CMR 19.061: Special Waste, including but not limited to the following:

i. Place properly wrapped and labeled ACWM pipe as well as all other packaged ACWM and debris in a roll-off container(s), or covered trucks, trailers or vans that are lined with 2 layers of 6 mil polyethylene sheeting.
   a. The container shall be an enclosed and sealed leak-tight container having proper labels and U.S. Department of Transportation placards as required.
   b. If open-top roll-off containers are used, they must be properly sealed, labeled and secured inside a locked fenced area when they are not being loaded to prevent access by unauthorized personnel, and covered to prevent water accumulation.

ii. Package, transport and dispose of ACWM in accordance with local, state, and federal regulations.

iii. Complete waste shipment records must be retained for 2 years by the owner/operator of the facility that generated the ACWM.

iv. Dispose of ACWM at a landfill permitted to accept ACWM.

**Please note:** “Bulk Loading”

1 of ACWM is not permitted without written approval from MassDEP - via approval of a Non-Traditional Asbestos Abatement Work Practice Application. (See BWP AQ-36 “Application for Non-Traditional Asbestos Abatement Work Practice Approval” [https://www.mass.gov/how-to/aq-36-non-traditional-asbestos-abatement-work-practice-approval](https://www.mass.gov/how-to/aq-36-non-traditional-asbestos-abatement-work-practice-approval) for information about how to apply for this permit.) Loading operations involving waste generated from asbestos cement pipe removal that is handled, packaged, labeled, containerized and stored/disposed of in accordance with Sections III.d. and III.e. of this guidance are not considered bulk loading.

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1 “Bulk Loading” means the placement of unconfined ACWM in a vehicle or container, such as a roll-off, dumpster or truck in lieu of packaging the ACWM in individual leak tight containers.[310 CMR 7.15(1) Definitions]
and do not require a Non-Traditional Asbestos Abatement Work Practice Approval.

**f. Visual Inspection Requirement**

When asbestos cement pipe removal is repaired or replaced, the final visual inspection shall be performed by a person who has completed a DLS-approved training course specific to asbestos cement pipe worker safety (e.g., the “8 hour OSHA Class II Asbestos Training: Asbestos Cement Pipe (ACP) Worker Safety” course), or another course similar in length and content that has been reviewed and approved in writing by DLS).

The person conducting the final visual inspection shall:

a. Inspect the work area to ensure there was no visible debris remaining:
   i. In the excavation trench;
   ii. In soil excavated from the trench;
   iii. In the surrounding area adjacent to the trench after the removal of the asbestos cement pipe, and
   iv. On any tools used during the removal/repair/replacement activities.

b. Ensure that all ACWM has been removed for proper storage/disposal.

The person who conducted the final visual inspection shall sign and date the documentation of the final inspection, in a format provided by the Department, as evidence that the inspection was performed and that the condition of “no remaining visible debris” was met. Owners/operators shall keep such documentation at their regular place of business for two (2) years from the date of final visual inspection and provide it to the Department upon request. (See Attachment B for an example of a Post-Abatement Visual Inspection template.)

**Frequently Asked Questions About Asbestos Cement Pipe Removal**

1. **What is Asbestos? Is it hazardous to your health?**

Asbestos is a naturally occurring fibrous mineral consisting of any one of a number of silicates. Asbestos has been and is still used in a variety of products because of its physical properties, which make it resistant to heat, fire, and many caustic chemicals. Asbestos has been used extensively as fireproofing, an insulating agent, and for decorative purposes, among many other uses.

The physical properties that give asbestos its resistance to heat and decay are linked with several adverse human effects. Asbestos tends to break into a dust of
microscopic fibers. Because of their size and shape, these tiny fibers can remain suspended in the air for long periods of time and can easily penetrate bodily tissue when inhaled or ingested. Because of their durability, these fibers can remain in the body for many years.

Asbestos is known to cause asbestosis and various forms of cancer. **Asbestosis** is a chronic disease of the lungs that makes breathing progressively more difficult, and can lead to death. Cancer can result from breathing asbestos fibers and **lung cancer** is the most frequent. **Mesothelioma**, an incurable cancer of the chest and abdominal membranes, almost never occurs without exposure to asbestos. Asbestos-related diseases have a long latency period and may not show up until 10 to 40 years after exposure. Each exposure increases the likelihood of developing an asbestos-related disease.

2. **How do I know whether cement pipes contain asbestos?**

Cement pipes used for public drinking water, waste water, roof drains or underground conduits may contain asbestos and should be handled in accordance with MassDEP’s asbestos regulation (310 CMR 7.15) and the specific “Requirements for Underground Asbestos-Cement Pipe” (310 CMR 7.15(12A) unless the owner possesses documentation based on sampling and analysis, in accordance with approved EPA test methods, that has shown that they do not contain asbestos. It is the obligation of anyone removing or repairing materials that contain asbestos to handle them in accordance with applicable laws and regulations. Ignorance or avoidance of this responsibility does not remove this obligation.

Up-to-date as-built plans, reviewed by the owner/operator, that accurately identify the material that pipes or pipe segments are made of can be relied on to confirm that the pipe contains asbestos. Another acceptable method for determining whether a pipe or pipe segment contains asbestos is through visual identification in the field at the time of excavation, when the pipe material is readily identifiable by observing the manufacturer’s brand-label (e.g. Johns-Manville Transite) or other markings on the pipe (e.g., indicating its source). This identification must be done by a person who has completed a DLS-approved training course specific to asbestos cement pipe worker safety (e.g. the “8 hour OSHA Class II Asbestos Training: Asbestos Cement Pipe (ACP) Worker Safety” course) or another course similar in length and content that has been reviewed and approved in writing by DLS). If up-to-date as-built plans are not available and a definitive visual identification cannot be made, the owner/operator can presume the cement pipe contains asbestos and handle it in accordance with this guidance.

3. **Does MassDEP have to be notified prior to beginning an asbestos cement pipe removal or repair project?**

Yes, the owner/operator of a facility containing asbestos cement pipes must notify MassDEP ten working days before removing or repairing asbestos cement pipes. Notification is required no matter who is doing the removal/repair or how much
asbestos cement pipe is being removed or repaired. Please note that notification is required for repairs of asbestos cement pipe using tools that are considered “non-destructive” or “fail-safe” such as metal compression patches, wet tapping, etc. (See response to Question number 4 below for how to satisfy the notification requirement in the case of an emergency situation.)

4. We have an emergency and the pipe(s) need to be repaired immediately. Can we make the necessary repairs prior to submitting notification to MassDEP?

Yes, if MassDEP grants you an “emergency waiver.” Work can be performed right away by calling the appropriate regional MassDEP office and obtaining an emergency waiver of the ten (10) working day waiting period. To identify the regional office for the town in which your project is located, please go to the MassDEP website at the following URL: https://www.mass.gov/service-details/massdep-regional-offices-by-community. Simply call the service center and ask for the asbestos program staff, or call the asbestos program staff member listed in response to FAQ number 27 below. The MassDEP staff person who approves an emergency waiver will provide a project-specific waiver number that must be entered on the notification form in the relevant field.

If the emergency occurs after business hours or on a weekend, leave a detailed message including your contact information on voice mail for the MassDEP asbestos inspector’s voice mail and proceed with the repairs as detailed in this document. You should then follow up with MassDEP on the following business day. You will still be required to submit an asbestos notification form ANF-001/BWP AQ-04 within 24 hours of the removal.

In addition, you can conduct the work without the required ten working day notification period if you have a MassDEP approved asbestos blanket notification. Information regarding asbestos blanket notifications may be found under the heading “BWP AQ 05 - Application for Asbestos Blanket - Form and Guidance” at the following link: http://www.mass.gov/eea/agencies/massdep/service/approvals/bwp-aq-05.html.

5. Is there a notification form I should use?

Notification for asbestos cement pipe removal must be made by completing and submitting to MassDEP the MassDEP-approved Asbestos Notification Form ANF-001 (also known as BWP AQ-04). The Asbestos Notification Form is available on MassDEP’s web site at http://www.mass.gov/eea/agencies/massdep/service/approvals/bwp-aq-04-anf-001.html. The asbestos notification can be filed online via MassDEP’s website. See question number 10 below.
6. When must the notification be submitted?
The regulations require that the notification must be submitted at least ten working days in advance of the start of the asbestos cement pipe removal project. “Working days” do not include Saturdays, Sundays, or any day that MassDEP offices are closed for business, such as legal holidays.

7. When does the ten working day waiting period begin and end?
Your 10 working day waiting period will start when you submit your form, and you will receive an automatic notification that the submittal was received.

Please note that you must start work on the “start date” and end on the “end date” you indicate on the ANF-001. If you change the start date, you must revise your notification prior to the original start date indicated and allow for a full ten-day waiting period prior to the revised start date. If you need to start work sooner than ten days before the revised start date, call the MassDEP regional office to request an emergency waiver of the ten-day waiting period. (See Emergency Waiver information found at FAQ no. 4.) If you start and end work on the dates indicated in the original notification, but work intermittently within that period, that does not require a revision - simply notify the MassDEP regional office which days will not be performing work.

8. Will I be notified when I can begin the work?
No. Unless MassDEP contacts you with a statement of deficiencies about your notification, you can begin work on the "project start date" you entered on the Asbestos Notification Form ANF-001. When completing the ANF-001, be sure that the "project start date" falls on or after the 10 working day wait period.

9. Is a fee required for filing an asbestos notification?
The notification fee required by MassDEP regulations (310 CMR 4.00: Timely Action Schedule and Fee Provisions) for asbestos removal is $100 per notification. A notification revision requires re-filing the notification and payment of a $35 fee.

Please note: owners of owner-occupied residential properties with four or fewer units, cities, towns, counties, districts of the Commonwealth, municipal housing authorities, federally recognized Indian tribe housing authorities, state agencies and the MBTA are not subject to the asbestos notification fee. However, state agencies are subject to fees greater than $100 (e.g., the $200 Blanket Notification Approval application fee).

10. How do I submit the ANF-001 to the MassDEP?
Notification must be made on a current version of the MassDEP Asbestos Notification Form (ANF-001), which satisfies the requirements of both MassDEP and
DLS regulations (See: https://www.mass.gov/how-to/aq-04-anf-001-asbestos-removal-notification.) Follow these steps:

1. If you have not already done so, register online with https://edep.dep.mass.gov/edep/. Select “New User” and complete the required steps. It should take no more than five minutes to complete the registration process, and you can begin online filing of your notifications right away.

2. The eDEP Asbestos Notification Form and Instructions are available are available at: https://www.mass.gov/guides/massdep-asbestos-construction-demolition-notifications

3. When filing via eDEP, you will pay the fee online using a credit card. Please note that “fee decals” are no longer sold and cannot be used to file online.

4. When filing electronically through eDEP, your 10-working day waiting period will start when you submit your form, and you will receive an automatic notification that the submittal has been recorded.

Troubleshooting

If you get an error message after you click “Error Check & Next” at the end of the form that says “License # is not recognized,” please check to make sure you typed the DLS License and Certification Numbers for the asbestos contractor, on-site supervisor/foreman, project monitor, and asbestos analytical lab number correctly. (Please note: Only fill in the fields for the DLS license/certification #’s for questions 6-9 in Section A of the form. The fields with the corresponding names and addresses will be pre-populated when you click “Error Check & Next.”)

If the project does not require the use of a DLS-licensed asbestos contractor, then simply check off the appropriate boxes on the BWP AQ04 (ANF-001) PreForm and when you click “Error Check & Next,” it will automatically pre-populate the asbestos contractor and asbestos supervisor fields (i.e. questions 6 and 7) to reflect work by a “Non Licensed Removal.” For the project monitor and analytical lab information (i.e. questions 8 and 9) for this type of “Non Licensed Removal” situation, you can enter the DLS certification number in the appropriate data field if one of those disciplines will be used on the project. Or if those disciplines will not be used, then you can simply enter “N/A” in the DLS Certification data fields and leave the “Name” data fields blank.

If you still get an error message pop-up box, please contact the MassDEP data systems group: BAW.eDEP@state.ma.us
*eDEP Features*

Use of the eDEP online notification system ensures that you are using the most current form, and that you have provided all required information. Filing your ANF-001 Notification online via eDEP helps avoid common mistakes. Furthermore, electronic filers can see all of the Construction/Demolition Notification Forms they have submitted on-line by clicking on the “My eDEP” tab in the upper left corner of your log-in screen. In the event that either the project start date or end date changes, triggering the requirement to file a notification revision, the simplest way to do this is by filing a notification revision online via eDEP. (See Question 10 for more information on filing notification revisions.)

If you are unable to use the eDEP online notification system to file your ANF-001, you may file an alternate format (e.g. a paper version of the ANF-001) by emailing a request to BAW.eDEP@state.ma.us. Please include a phone number where you can be reached so that MassDEP can help you in your request. If you have any questions or desire further information about filing electronically through eDEP, please email your inquiry to BAW.eDEP@state.ma.us.

11. **Do I need to notify other government agencies in addition to the MassDEP?**

You may be required to notify the local Building Department, Fire Department, or Board of Health in the city or town where the asbestos is being removed. Always contact local officials to ask what notification or permits are required. Submittal of a complete ANF-001 to MassDEP satisfies state (both MassDEP and DLS) and federal notification requirements (e.g., EPA Asbestos NESHAP) for projects that will remove or disturb asbestos-containing material.

12. **Do I need to hire an asbestos contractor to repair and/or remove asbestos cement pipe?**

DLS’s regulation (453 CMR 6.00) establishes requirements for the use of contractors and other asbestos specialists who are licensed or certified by DLS. Please call DLS for all licensing and training questions. Contact information can be found in the response to Question 28 in the attached Frequently Asked Questions.

In lieu of hiring a DLS-licensed asbestos contractor, an owner or operator conducting asbestos abatement activity on underground asbestos cement piping may hire Contractors or other entities who have completed the “8 hour OSHA Class II Asbestos Training: Asbestos Cement Pipe (ACP) Worker Safety” course or a course similar in length and content reviewed and approved in writing by DLS, provided that the owner, operator and contractor comply with the provisions and procedures that are described in this guidance document.
13. Can I crush the asbestos cement pipe in the trench and place new pipe over it?
No, crushing an asbestos cement pipe and leaving it in the trench is prohibited under 310 CMR 7.15. Further, the EPA has determined that backfilling and burial of the crushed asbestos cement pipe would cause these locations to be considered active disposal sites and therefore subject to the “Standard for Active Waste Disposal Sites” (40 CFR 61.154).

14. Can I “ream” or “pipe burst” new water supply pipe through existing asbestos cement pipe?
No, this is not allowed because reaming or pipe bursting through an existing asbestos cement pipe would cause the existing asbestos cement pipe to become crushed and “friable” (see response to question number 13 above).

15. What if the trench is filled with water which prevents the placement of polyethylene sheeting below the asbestos cement pipe (as required in Section IV.d. – Handling Practices)?
If the trench is filled with water, the placement of polyethylene sheeting is not required, as stated in Section III.d – Specific Work Practice Requirements. However, any visible debris must be managed in accordance with the requirements of Section III.e. – Packaging, Labeling, Disposal and Record Retention and III.f. – Visual Inspection Requirement.

16. What should I do with the water in the trench?
For work on the intact asbestos cement pipe(s), first try to pump the water out to a storm drain prior to any work. If there is substantial damage to the asbestos cement pipe and there are numerous pieces immersed in standing water, then the contaminated water should be pumped out and filtered through a 5 micron filter before the water is discharged.

17. Am I required to remove asbestos cement pipe that will not be disturbed by repair or replacement activities?
MassDEP only requires the removal of asbestos cement pipe that is exposed and will be disturbed during repair or replacement activities.

When a section of asbestos cement pipe is being repaired or replaced, the remaining portions of that pipeline are not required to be removed, provided that they are not exposed by excavation activity.

Additionally, if a section of asbestos cement pipe that is being actively used (e.g., a utility conduit) is exposed by excavation but will not be impacted by the repair or replacement work, it may be left in place and backfilled.
18. Where can I obtain the packaging and labeling materials?
The MassDEP-required asbestos warning labels and asbestos waste bags may be obtained from industrial supply houses, insulation supply houses, or may be purchased directly from licensed asbestos contractors. Polyethylene sheeting and duct tape are widely available from hardware, home supply and other stores.

19. Can I store waste asbestos cement pipe?
Asbestos cement pipe waste material that has been properly wetted, packaged in sealed, leak-tight containers, and labeled can be temporarily stored for up to thirty (30) days at a secure location on property owned or controlled by the owner or operator of the public/private utility system or at the place of business of the company/contractor removing asbestos-cement pipe from its site of origin. The storage location must be secured (e.g., storage in a locked fenced-in area) and maintained in accordance with all federal, state and local requirements. Contact local officials to determine if temporary storage of asbestos cement pipes is allowed in your municipality.

20. Can I store unused “virgin” asbestos cement pipe?
Unused (i.e. “virgin”) asbestos cement pipe that is still suitable for use is not considered an ACWM, and is therefore not subject to the ACWM storage limitations. Measures should be taken to ensure that stored virgin asbestos cement pipe does not become deteriorated by constant exposure to the elements. If virgin asbestos cement pipe deteriorates so that it is no longer suitable for use, then it would be considered ACWM and subject to all the applicable packaging, labeling, storage and disposal requirements at 310 CMR 7.15(15) – (18).

21. Can I dispose of the asbestos cement pipes with my other solid waste?
No. The asbestos cement pipes must be managed as a “Special Waste” (requiring proper packaging, labeling, and disposal) and in Massachusetts may only be disposed of at a facility that is permitted to accept ACWM under 310 CMR 19.061 (“Special Waste” regulation).

22. How can I find a place to dispose of the asbestos cement pipes?
The best option is to hire a waste hauler or asbestos contractor to transport the asbestos cement pipes to a disposal facility. Many waste haulers and asbestos contractors are familiar with various disposal facilities and frequently transport wastes to facilities permitted to accept ACWM.

You also can contact a landfill directly and arrange to transport the waste to the landfill yourself. ACWM can only be disposed at a solid waste landfill permitted to accept “Special Waste”, which in Massachusetts must be operated in accordance with regulatory requirements specified at 310 CMR 19.061, or in another state, in
accordance with the relevant “Special Waste” permit requirements. You should contact the facility in advance of transporting ACWM for disposal.

ACWM may not be sent to an incinerator or to a construction and demolition (C&D) debris processing facility in Massachusetts. Likewise, no Massachusetts transfer stations are permitted to accept ACWM.

23. How do I find an asbestos waste hauler?
Asbestos waste haulers may be located by using any available internet search engine or by looking this topic up in the Yellow Pages. Try entering/looking under topics such as "rubbish," “waste” or "asbestos." Any firm hauling ACWM must be registered with the Federal Highway Administration’s Motor Carrier Division. Call the nearest regional MassDEP office for additional help.

24. Can I transport the waste asbestos cement pipes myself?
Waste asbestos cement pipe that has been packaged and labeled in accordance with Section III.e. – Packaging, Labeling, Disposal and Record Retention, may be transported in a covered truck, trailer or van to a secured, temporary storage location at property owned or controlled by the pipe owner or operator or at the place of business of the company/contractor that removed the asbestos-cement pipe from the excavation, as outlined in question 19. If a van is used, the waste asbestos cement pipe should be transported in a compartment separate from the driver or passenger seats. A pickup truck bed should be covered with an impermeable tarpaulin cover and secured so that it does not allow the accumulation of rain water. The waste containers should not be loaded above the side rails in any truck or trailer.

25. Is there any paperwork required for transporting the waste asbestos cement pipes?
Yes. 310 CMR 7.15(18): Waste Shipment Records and Reports requires that an asbestos Waste Shipment Record (WSR) document accompanies each shipment of ACWM. Waste hauling companies and/or asbestos removal companies can supply WSR forms. (A template for the WSR form is available at: https://www.mass.gov/guides/massdep-asbestos-construction-demolition-notifications). The WSR must be signed by each company or person involved with removal, transportation and disposal of the ACWM, including the facility owner or “generator” of the asbestos. The asbestos removal contractor may sign on behalf of the owner.

Pursuant to 310 CMR 7.15(18), if a completed copy of the WSR, signed by the disposal facility to acknowledge receipt of the waste shipment, is not received back by the generator within 35 days of the initial shipment, the generator must contact the transporter or disposal facility to determine the status of the waste shipment. This section of the regulation also requires the generator to notify the MassDEP regional office in writing if the generator does not receive a signed copy of the WSR from the disposal facility within 45 days of the date of shipment. The generator, the transporter, and the disposal facility must each retain a copy of the WSR signed by all parties.
the parties for at least two years. You do not need to send a completed copy of the WSR to any regulatory agency, but MassDEP may request a copy of the WSR from any of the parties in the event of an inspection.

Additionally, transportation of asbestos (which is designated as a hazardous material for transportation) is regulated by the U.S. Department of Transportation (US DOT), which has established requirements for shipping documents, packaging, labeling, and vehicle placarding (49 CFR 173.1090): asbestos must be loaded, handled and unloaded in a manner that will minimize occupational exposure to airborne asbestos fibers released during transit. US DOT also requires that transporters carry identification papers for all quantities of asbestos greater than 1 pound. The Massachusetts state police enforce this requirement.

26. Does MassDEP have a document containing general information about asbestos?

27. How do I contact MassDEP for more information?
For more information on asbestos or other environmental issues, please visit MassDEP’s website at [www.mass.gov/dep/about/contacts.htm](http://www.mass.gov/dep/about/contacts.htm) or contact the following MassDEP officials:

**Boston:** (For general information about asbestos policy/regulation and notification/fees) Mike Elliott at 617-292-5575 or michael.elliott@mass.gov

**Central Region:** Gregg Levins at 508-767-2768 or gregory.levins@mass.gov

**Northeast Region:** John MacAuley at 978-694-3262 or john.macauley@mass.gov

**Southeast Region:** Cynthia Baran at 508-946-2887 or cynthia.baran@mass.gov
Emergency Waiver Hotline: 508-946-2882

**Western Region:** Marc Simpson at 413-755-2115 or marc.simpson@mass.gov

28. How do I contact Massachusetts DLS?
For information about DLS asbestos training, certification and/or licensing, contact:

Massachusetts Department of Labor Standards/Asbestos Program
Charles Hurley Building
19 Staniford Street, 2nd Floor
Boston, MA 02114
Phone: 617-626-6960, Fax: 617-626-6965, Web: [www.mass.gov/dols](http://www.mass.gov/dols)
Template A: Pre-Demolition/Renovation Survey Documentation

1. Project Location:

(Street address, GPS coordinates or other location identification)

City/Town: ____________________________, MA

2. Pre-Demolition/Renovation Survey

Survey Date: _______________

MassDEP’s asbestos regulation requires owners and operators (including contractors) to determine whether cement pipe in the utility conduit that will be disturbed contains asbestos. Please identify the information that was used to determine whether the pipe at this location contains asbestos by checking all applicable boxes:

☐ Accurate, up-to-date as-built plans or other utility network documents. Specify title and revision date of the as-built drawing or other documentation:

☐ Visual identification/field observations of exposed pipe. Specify manufacturer’s brand-label marking (e.g. “Johns-Manville Transite”) or other features used to identify composition/source of pipe:

☐ I was physically present at the location described above and personally observed the pipe or pipe segment when it was exposed and before it was removed, replaced and/or repaired.

☐ Presumed that pipe contained asbestos.

☐ Relied on representative samples that were analyzed at a certified laboratory.

Identify Laboratory and DLS certification number: __________________________

Date samples were collected: _______________ Date of lab report: _______________

Result of the analysis (% asbestos): _______________

Does the pipe (or pipe segment) that will be disturbed contain asbestos? ☐ Yes ☐ No

If “Yes”, what is the MassDEP Asbestos Notification Number (ANF-001 Form)? __________

3. Qualifications. Please check the applicable box:

☐ I have successfully completed the “8 hour OSHA Class II Asbestos Training: Asbestos Cement Pipe (ACP) Worker Safety” course approved by the Massachusetts Department of Labor Standards (DLS); or

☐ I am a DLS-certified Asbestos Inspector.

Name (please print): __________________________

Title/Company: ____________________________

Signature: ____________________________ Date: ____________________________
Template B: Post-Abatement Visual Inspection Documentation

1. Project Location/Identification:

_____________________________________________________________________________
(Street address, GPS coordinates or other location identification)

City/Town: _________________________________ MA

MassDEP Asbestos Notification Number (ANF-001 Form): __________________________

2. Post-Abatement Visual Inspection Date of Visual Inspection: ___________

When any repair/removal of an asbestos cement pipe or pipe segment is complete, a visual inspection must be done before the trench is backfilled to confirm that ALL of the following conditions have been met. Please check each condition below to document that the visual inspection confirmed:

☐ No visible debris was present in trench.

☐ No visible debris was present outside of the trench (e.g. in excavated soils and the immediately surrounding area).

☐ No visible contamination was seen on tools.

☐ All Asbestos Containing Waste Material has been removed from the area for proper disposal.

☐ I was physically present at the location described above and personally conducted this inspection while the pipe or pipe segment was exposed and before the trench was backfilled.

3. Qualifications. Please check the applicable box:

☐ I have successfully completed the "8 hour OSHA Class II Asbestos Training: Asbestos Cement Pipe (ACP) Worker Safety" approved by the Massachusetts Department of Labor Standards (DLS), or a course similar in length and content reviewed and approved in writing by DLS; or

☐ I am a DLS-certified Asbestos Project Monitor.

Name (please print): ________________________________

Signature: _________________________________________

Title/Company: ______________________________________

Date: ____________________________
APPENDIX F

Covid-19 Bid Information
Due to the Coronavirus pandemic the Burlington Town Offices are closed to the public, but staff is still working and the Town intends to go forward and bid projects.

- **Bid Documents** - Pick-up/Drop-off of bid documents will be by appointment only, USPS mail, UPS, FedEx, etc. are not a reliable options as the Town buildings are closed and not receiving deliveries. Contact the DPW/Engineering Division at 781-270-1640 to arrange a time to pick-up or drop-off bid documents.
- **Bid Opening** – Bids will be publicly opened and read aloud at the Town Hall Annex 25 Center Street Burlington MA, specific location to be determined on the bid opening day.
APPENDIX G

Prevailing Wage Rates