TOWN OF WATERTOWN
WATERTOWN, CONNECTICUT

NOTICE OF BID

Water Main Installation
Veterans Park
570 Nova Scotia Hill Road
Watertown Public Works Department

Sealed bids are invited and will be received by the Purchasing Agent of the Town of Watertown at the office of the Purchasing Agent, Town Hall Annex, 424 Main Street, Watertown, Connecticut, until 11:00 a.m., Tuesday, May 13, 2014 at which time and place they will be publicly opened and read aloud for furnishing all labor, materials and equipment to complete the water main extension project.

The Information for Bidders, Form of Bid, Plans, Specifications, Performance and Payment Bonds, and other contract documents may be examined at the office of the Purchasing Agent, Town Hall Annex, 424 Main Street, Watertown, Connecticut 06795. Proposals must be submitted on the forms provided and in a sealed envelope plainly marked "Bid – Water Main Installation".

To receive consideration bids must be in the hands of the Purchasing Agent or his authorized representative no later than the day and hour mentioned above.

The Purchasing Agent reserves the right to accept or reject any or all bids; to waive any informality; or to accept any bid deemed in the best interests of the Town of Watertown.

The Town of Watertown reserves the right to take into account the residency of bidders within the Town of Watertown and/or the location of the bidder's business within the Town of Watertown in awarding this bid.

All bids will be considered valid for a period of sixty (60) days.

Jason Warner
Purchasing Agent
Town of Watertown
INFORMATION FOR BIDDERS

TOWN OF WATERTOWN
WATERTOWN, CONNECTICUT 06795

Water Main Installation
Veterans Park
570 Nova Scotia Hill Road
Watertown Public Works Department

BID OPENING: 11:00 a.m., Tuesday, May 13, 2014

PROPOSALS RECEIVED
All bids must be in a sealed envelope and received prior to 11:00 a.m., Tuesday, May 13, 2014 at the office of the Purchasing Agent, 424 Main Street, Watertown, Connecticut 06795.

PREPARATION OF PROPOSALS
Proposals must be made upon forms contained herein. The blank spaces in the Proposal must be filled in correctly where indicated. The Bidder must state the prices for which he proposes to do each item of the work contemplated. In case of discrepancy where both words and the numerals are requested, the words shall govern. Ditto marks are not considered writing or printing and shall not be used. The Bidder shall sign his Proposal correctly. If the Proposal is made by an individual, his name, post office address and telephone number must be shown. If made by a firm, partnership, or corporation, the Proposal must be signed by an official of the firm, partnership, or corporation authorized to sign contracts, and must show the post office address and telephone number of the firm, partnership, or corporation. Failure to do so may disqualify the bid.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the Bidder, post office address, and name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed to: The Purchasing Agent, Town Hall Annex, 424 Main Street, Watertown, CT 06795.

All information shall be entered in ink or by typewriter. Mistakes may be crossed out and corrections inserted before submission of your bid. The person signing the bid shall initial corrections in ink.

Corrections and/or modifications received after the closing time specified will not be accepted.

SUBMISSION OF PROPOSALS
All proposals and literature shall be submitted IN DUPLICATE on the proposal form, which is a part of these specifications.

Descriptive literature containing complete specifications must accompany each bid. If a bidder wishes to furnish additional information, more sheets may be added.
Response summaries will be available online at http://www.watertownct.org. on the day of the bid opening.

Responses delivered via fax are received subject to the following qualifications and limitations:

- The Town is not responsible for the confidentiality of the information transmitted.
- The Town cannot guarantee that its fax equipment will be operational and able to receive transmittals by a particular time and date. It is the Bidder's responsibility to ensure that quotations are received in their entirety and on time at the required location. It is recommended that vendors be advised to call immediately after transmitting a document electronically to confirm complete and accurate receipt by the Town. The Town assumes no liability in the event that a bidder's electronic transmission is not received by the Town in a timely fashion, or is not received either in its entirety or error-free.
- Bids transmitted electronically which have a bond requirement are subject to the same submittal requirements as those responses delivered via traditional means, such as mail or hand delivery, or as otherwise stipulated by appropriate authority.

INCURRING COSTS

The Town of Watertown is not liable for any cost incurred for the preparation of proposals or submission of samples by the firms submitting proposals for the work requested in this bid document or request for proposals.

FAMILIARITY WITH THE WORK

Each bidder is considered to have examined the work to fully acquaint him/herself with the exact existing conditions relating to the work and has fully informed himself as to the work involved and the difficulties and restrictions attending the performance of this bid. Failure to do so will not relieve a bidder of his obligation to furnish all labor, material and equipment necessary to carry out the work for the consideration set forth in this bid. The submission of a bid will be considered as conclusive evidence that the bidder has made such examination.

Where exploration or inspection data is shown on the Plans and/or specifications or made available to the Bidder, it is understood that such data where obtained in the usual manner and with reasonable care and are to be interpreted and used as the Bidder sees fit. There is no expressed or implied agreement that the data has been correctly indicated, and the Bidder is cautioned to take into account that conditions affecting the work may differ from those indicated.

The Owner assumes no responsibility whatsoever with respect to ascertaining for the Contractor such facts concerning physical characteristics relating to this project. The Bidder agrees that he shall make no claim for and has no right to additional payment or extension of time for completion of the work, or any other concession, because of any interpretations or misunderstanding on his part of this
bid, or because of any failure on his part to fully acquaint himself with all conditions relating to the work. Permission for making borings, test pits, destructive tests or other investigations of subsurface conditions will be arranged for by the bidder upon receipt of a written approval by the Town.

CONSIDERATION OF PRIOR SERVICE
Previous performance, quality of service and merchandise will be considered.

ADDENDA AND INTERPRETATIONS & ALTERNATE PROPOSALS
Addenda information will be available online at http://www.watertownct.org. Adobe Acrobat® Reader may be required to view this document. It is strongly suggest that Bidders check for any addenda a minimum of forty eight hours in advance of the bid deadline.

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

If any person contemplating submitting a proposal is in doubt as to the true meaning of any part of these specifications, he may submit a written request for an interpretation to the Purchasing Agent. No interpretations as to the meaning of the plans, specifications or other Contract Documents will be made to any Bidder orally.

Every request for such interpretation should be in writing addressed (duplicate copy) to the Town of Watertown, Purchasing Agent, 424 Main Street, Watertown, Connecticut 06795, and to be given consideration, must be received at least five (5) days prior to the date fixed for the opening of Bids. Any and all such interpretations and any supplementary instructions will be in the form of written Addenda to the Specifications which, if issued, will be mailed by Registered Mail with Return Receipt Requested to all prospective Bidders at the respective addresses furnished for such purposes, not later than three (3) days prior to the date fixed for the opening of bids. Failure of any Bidder to receive any such Addendum or interpretations shall not relieve any Bidder from any obligations under his bid as submitted. All Addenda so issued shall become part of the Contract Documents. Oral explanations will not be binding on the Town.

The specifications listed are to be interpreted as meaning the minimum acceptable by the Town of Watertown. Bidders are requested to submit quotations on the basis of these specifications. Alternative bids providing a broader scope and/or services than requested in these specifications may receive consideration providing such equipment and/or service is clearly explained. Any exceptions to the specifications requested herein must be clearly noted in writing and are to be included as a part of the bid proposal. If none are included it will be assumed that there are none.

Definition of the word "complete" means that each unit of the equipment proposed shall include all appurtenances, fasteners, parts, accessories, and services ordinarily catalogued.
An item equal to that named or described in the specifications may be furnished by the Bidder, except where expressly noted as “no substitutions.” The naming of any commercial name, trademark, or other identification shall not be construed to exclude any item of any manufacturer not mentioned by name, nor limit competition, but shall establish a standard of equality only. An item shall be considered equal to the item so named or described if:

- It is at least equal in quality, durability, appearance, strength and design.
- It will perform at least equally the function imposed by the design for the work being contracted for or the material being purchased.
- It conforms substantially, even with deviations, to the detailed requirements for the item in the specifications.

The Bidder shall hold the Town of Watertown, its officers, agents, servants, and employees, harmless from liability of any nature or kind because of use of any copyrighted or uncopyrighted compositions, secret process, patented or unpatented inventions, articles or appliances furnished or used under this bid, and agrees to defend, at his own expense, any and all actions brought against the Town of Watertown or himself because of the unauthorized use of such articles.

**QUOTATION LIMITATION**

Bidders shall offer only **ONE ITEM AND PRICE** for each line item bid. If an or equal item is to be bid, the bidder is to select the brand and model that meets or exceeds the specified item, and submit his bid for that item.

**ESTIMATE OF WORK**

For bidding purposes, the work has been subdivided into unit price items. The quantities shown are to be considered as approximate only. The Purchasing Agent does not expressly or by implication agree that the actual quantity will correspond therewith, but reserves the right to increase or decrease the amount of any item or portion of the work as deemed necessary.

**SAMPLES**

Samples of articles, when required shall be furnished free of cost of any sort to the Town of Watertown. Samples received may be retained by the Town for future comparison. Samples which are not destroyed by testing, or which are not retained for future comparison will be returned upon request at the bidder's expense.

**WITHDRAWAL OF BID**

Bidders may withdraw their proposals at any time prior to the bid date. No agent/broker shall withdraw or cancel their proposal for a period of sixty (60) days after the bid closing date of **11:00 a.m., Tuesday, May 13, 2014**. The successful agent/broker shall not withdraw, cancel or modify their proposal.

**POWER OF ATTORNEY**

Attorneys-in-fact who sign contract bonds must file, with each bond, a certified and effectively dated copy of their power of attorney.
EXECUTION OF CONTRACT

The party to whom the Contract is awarded, or his authorized representative, will be required to attend at the office of the Purchasing Agent of the Town of Watertown, with the sureties offered by him or them, and a current certificate of Corporate good standing issued by the Office of the Secretary of State, in which the corporation is incorporated, and execute the Contract within five (5) days from the date of the award. If the party entering into this contract is a corporation, a Corporate Resolution duly executed by the President and Secretary of the Corporation authorizing the Corporation to enter into this Contract shall be provided. In case of his failure or neglect so to do, the Town may, at its option, determine that the Bidder has abandoned the Contract, and thereupon the Proposal and acceptance shall be null and void, and bid security accompanying the Proposal shall be forfeited as liquidated damages to the Town. If the party entering into this contract is a partnership, a partnership resolution duly executed by a majority of the general partners authorizing the partnership to enter into this contract shall be provided.

SUBCONTRACTORS

- Each bidder contemplating the use of any subcontractor shall submit a list of subcontractors as listed on the Bid Form.
- The apparent low bidder shall file with the Town of Watertown, within five (5) days after the date of bid opening, a complete list of the names and addresses of competent, responsible and qualified subcontractors who are actually to perform major portions of the work. This in no way restricts or limits the requirement that all subcontractors must be approved by the Town.
- Subcontractors listed on the Bid Form or those previously approved may not be changed without the approval of the Town of Watertown.

Local subcontractors, material suppliers, and labor in the Town of Watertown should be considered and sought insofar, as is practical in the performance of this project.

QUALIFICATION OF BIDDER

In determining the qualifications of a bidder, the Town may consider his record in the performance of any contracts for similar work into which he may have previously entered; and the Town expressly reserves the right to reject the bid of such bidder if such record discloses that such bidder, in the opinion of the Town, has not properly performed such contracts or has habitually, and without just cause, neglected the payment of bills or has otherwise disregarded his obligations to subcontractors, suppliers, state or local codes, men or employees of subcontractors.

The Town may make such investigation as he deems necessary to determine the ability of the bidder to perform the work and the bidder shall furnish to the Town all such information and data for this purpose as the Town may request. The Town reserves the right to reject any bid if the evidence submitted by or the investigation of such bidder fails to satisfy the Town that such bidder is properly qualified, or that such bidder misrepresented material facts in the bid documents.
DISQUALIFICATION OF BIDDERS
More than one proposal from an individual, firm, partnership, corporation, or an association under the same or different names will not be considered. Reasonable grounds for believing that any Bidder is interested in more than one proposal for the work contemplated will cause the rejection of all proposals in which such Bidder is interested. Any or all proposals in which such Bidder is interested will be rejected if there is reason for believing that collusion exists among the Bidders and all participants in such collusion will not be considered in future proposals for the same work. Proposals in which the prices are obviously unbalanced may be rejected. No Contract will be awarded except to competent Bidders capable of performing the class of work contemplated.

DELIVERY
Inasmuch as this work concerns a needed public improvement, the provisions of this bid relating to the time of delivery, performance and completion of the work are of the essence of this bid. Accordingly, the successful bidder shall commence work upon receipt of the signed Purchase Order unless the Town shall authorize or direct a further delay.

NOTE: Work is to be completed by July 1, 2014.

Prices quoted must include delivery to the Town of Watertown as specified on the Purchase Order. No charges will be allowed for parking, crating, freight, express or cartage unless specifically stated and included in this bid.

Time of delivery may be considered in the award.

PAYMENT
The successful bidder shall execute three (3) copies of the contract agreements. Monthly payments to the Bidder shall be made on ninety-five percent (95%) of the value of work completed, materials and supplies delivered to the site and properly stored. The successful Bidder for this project shall be required to submit a Mechanics Lien Waiver, acceptable to the Town, with each progress payment, and at time of final payment, prior to any payment made.

The Town, after inspection and acceptance of workmanship, and in consideration of the faithful performance by the Bidder of all and singular his covenants, promises, and agreements contained herein, agrees to pay the Bidder for the full completion by him of the work embraced in this Contract, within (30) Thirty Days of the receipt of the final invoice. When subcontractors or suppliers are utilized, the successful Bidder for this project shall be required to submit a Mechanics Lien Waiver, acceptable to the Town, with each progress payment and/or at time of final payment prior to any payment being made.

Time, in connection with any discount offered, will be computed from the date of delivery to the Town or from the date a correct invoice is received by the Town's Finance Department, if the latter date is later than the date of delivery.
Prices will be considered as NET, if no cash or payment discount is shown.

The successful bidder shall submit invoices to the following address:
   Town of Watertown
   Public Works Department
   61 Echo Lake Rd.
   Watertown, CT 06795

IT IS UNDERSTOOD AND AGREED THAT SHOULD A BID BE ACCEPTED, IT WILL AUTOMATICALLY BECOME THE CONTRACT OR AN ADDENDUM TO ANY CONTRACT AGREED UPON.

Notification of the bid award will be made by issuance of a purchase order. Bidders are to list their bids on the appropriate attached sheets. Bidders may attach a letter of explanation. A clear notification should be made on the standard bid sheets at the appropriate point of explanation that there is a letter of explanation attached. All bids must be NET prices.

The successful bidder shall submit an itemized invoice to the Town of Watertown for the work as described herein.

The bidder shall be required to submit a Mechanics Lien Waiver, acceptable to the Town of Watertown, with each progress payment and at time of final payment prior to any payment being made.

At the time of award the successful bidder shall be required to supply the Town of Watertown a Certificate of Good Standing, certifying that the corporation is in fact a valid corporation and presently licensed to conduct business in the State of Connecticut.

SALES TAX
Certain materials and supplies incorporated in the work of this project are exempt from Connecticut Sales Tax. The Bidder shall familiarize himself with current regulations of the State Tax Department. The tax on materials or supplies exempted by such regulations shall not be included as part of the bid. The Town will furnish the successful Bidder sales tax exemption authorization.

CARE AND PROTECTION OF PROPERTY
The Bidder shall take particular care to avoid damages to all private and public property and to private or public improvements within the Town's right of way. He shall make good any damages to the satisfaction of the Town. There shall be no additional compensation for the repair or restoration of private or public property improvements.

COMPLIANCE WITH FEDERAL, STATE AND LOCAL CODES
The Bidder shall be responsible for full compliance with any Federal, State and/or Local codes, laws, regulations and standards, as applicable.
AWARD

The Town of Watertown reserves the right to accept or reject any bid to best serve its interests, or to hold the bids for sixty (60) days before decision.

The Town reserves the right to reject any and all bids (or any part thereof), to waive defects in proposals, or to accept any proposal deemed to be in its best interest.

Exceptions will be considered to the specification provided, providing they are listed and fully explained on a separate page entitled "EXCEPTIONS TO SPECIFICATIONS"

Each exception will be considered as to its degree of impact and total effect on the bid. The purchaser shall determine which (if any taken) exceptions are acceptable, and this determination shall be final.

The Town of Watertown reserves the right:

- To award bids received on the basis of individual items, or groups of items, or on the entire list of items.
- To reject any or all bids, or any part thereof.
- To waive any informality in the bids.
- The Town of Watertown reserves the right to take into account the residency of bidders within the Town of Watertown and/or the location of the bidders business within the Town of Watertown in awarding this bid.
- To accept the bid that is in the best interest of the Town of Watertown. The Purchasing Agent’s decision shall be final.

INSURANCE

A. General:

The Bidder shall be responsible for maintaining insurance coverage in force for the life of the contract of the kinds and adequate amounts to secure all of the Bidder’s obligations under the contract with an insurance company with an AM Best Rating of A - VII or better licensed to write such insurance in Connecticut and acceptable to the Town of Watertown.

The insurer shall provide the Town of Watertown with Certificates of Insurance signed by an authorized representative of the insurance company(ies) prior to the performance of this contract describing the coverage and providing that the insurer shall give the Town of Watertown written notice at least thirty (30) days in advance of any termination, expiration, or any and all change in coverage.

Such insurance or renewals or replacements thereof shall remain in force during the Bidder’s responsibility under this agreement.

The Bidder at his own cost and expense shall procure and maintain all insurance required and shall
name the Town of Watertown as an additional insured on all contracts except Worker’s Compensation and Professional Errors & Omissions coverage.

In order to facilitate this requirement for insurance, it is recommended that the bidder forward a copy of this exhibit to the bidder’s insurance representative(s).

B. **Specific Requirements:**
   (1) **Workers’ Compensation Insurance**
       The Bidder shall provide Workers’ Compensation Insurance required by law and the Employer’s Liability Insurance for at least the amounts of liability for Bodily Injury by accident of $100,000 each accident; Bodily Injury by Disease each employee of $100,000; Bodily Injury by Disease, policy limit of $500,000.

   (2) **Commercial General Liability Insurance**
       The Bidder shall carry Commercial General Liability policy (Insurance Services Office Incorporated Form CG-0001 or equivalent). A per occurrence limit of $1,000,000 is required. The Aggregate Limit will be not less than $1,000,000.

   (3) **Business Automobile Liability Insurance**
       The Bidder shall carry Business Automobile Liability Insurance. (Insurance Services Office Incorporated Form CA-00001 or equivalent). A per occurrence limit of $1,000,000 is required. “Any Auto” (symbol 1 or equivalent) is required.

C. **Hold Harmless & Subcontractor’s Requirements:**
   The Bidder shall require the same insurance that it is required to carry by the Town of Watertown to be carried by any subcontractors and independent contractors hired by the Bidder and to obtain Certificates of Insurance before subcontractors and independent contractors are permitted to begin work.

   The Bidder shall require that the Town of Watertown be named as Additional Insured on all subcontractor’s and independent contractor’s policies before they are permitted to begin work.

   The Bidder and all subcontractors and independent contractors and their insurers shall waive all rights of subrogation against the Town of Watertown, and its officers, agents, servants and employees for losses arising from the work performed by each on this contract.

   The Bidder assumes and agrees to hold harmless, indemnify, protect and defend the Town of Watertown against any and all liability for injuries and damages to Bidder and to Bidder’s employees, agents, subcontractors and guests, third parties or otherwise incident to or resulting from any and all operations performed by a contractor under any terms of this contract.

D. **Other Data:**
   NOTE 1: If Bidder is only a vendor shipping goods via Common Carrier only, General Liability
is required.

NOTE 2: If Bidder is a Professional, Errors & Omission coverage will be required.

NOTE 3: The Town reserves the right to amend amounts of coverage required and the types of coverage provided based on work or service to be performed.

GUARANTEE
The bidder shall unconditionally guarantee for a period of one (1) year from the date of acceptance, all materials, supplies, equipment, and services; including but not limited to its workmanship, delivery and installation. If within the guarantee period there are any defects or signs of deterioration the bidder shall repair, adjust or replace the item(s) to the complete satisfaction of the Town. These repairs, adjustments, or replacements are at the sole expense of the bidder and shall be made at such times that are agreeable to the Purchasing Agent so that it is least detrimental to instructional programs.

REPAIRS FOR ONE (1) YEAR
The bidder’s attention is especially directed to the Guarantee Section of the contract whereby two percent (2%) of the Contract amount will be retained for making repairs on the work, as may be required, during the guarantee period of one (1) year after the date of the final estimate.

PERMITS
When required all licenses and permits for complying with any applicable Federal, State, and Municipal laws, codes, regulations in connection with the prosecution of the work shall be obtained by the Bidder, at no additional cost to the Town. The cost of local building permits will be assessed at sixteen cents per one thousand dollars of construction value as declared on the building permit application pursuant to State of Connecticut Statute Sec. 29-263 by the Town of Watertown. The successful contractor will be responsible for payment to the Town of Watertown Building Inspection Department.

NONDISCRIMINATION IN EMPLOYMENT
The successful bidder shall agree and warrant that, in the performance of this contract, he will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, sex, religion, or national origin in any manner prohibited by State, Federal, County, or Municipal law. A certification of Nonsegregated Facilities and a Certification Regarding Equal Employment Opportunity shall be considered a part of this contract.

DISPUTE RESOLUTION
1. Mandatory Negotiation.
The parties agree that they will attempt to negotiate in good faith any dispute of any nature arising under this agreement. The parties shall negotiate in good faith at not less than two (2) negotiation sessions prior to seeking any resolution of any dispute by any means under Dispute Resolution provisions contained herein below. Each party shall have the right to legal representation at any such negotiation session.
2. **Mandatory Mediation.**
Any dispute or question arising under the provisions of this agreement, which has not been resolved under the mandatory negotiation provision, shall be submitted to non-binding mediation before one (1) mediator agreed upon by the parties or appointed by the American Arbitration Association. Mediation proceedings shall take place at any suitable location in Watertown, Connecticut and shall be conducted in accordance with the rules and procedures of the mediation then applicable of the American Arbitration Association. If an independent mediator is agreed upon by the parties, said independent mediator shall establish the rules of such mediation. Each party shall pay one half of all costs and expenses of such mediation. The parties shall use their best efforts to reach a good faith resolution of said dispute within ninety (90) days after the commencement of the mediation proceedings. Any decision of the mediator shall not be binding upon the parties except by agreement of the parties.

3. **Election to Begin Court Proceedings.**
Provided the parties have completed the mandatory negotiation proceedings and the foregoing provisions with respect to mediation notwithstanding, if either party determines that mediation is not an appropriate means to settle any such dispute, such party shall have the right to commence judicial proceedings for the purpose of settling any such dispute.

**MECHANICS LIEN WAIVERS**
The successful Bidder shall be required to submit a Mechanics Lien Waiver, acceptable to the Town of Watertown, with each progress payment, and/or at time of final payment, prior to any payment made.

**OSHA 10 HOUR CERTIFICATION**
Contractor shall provide documentation to verify that all employees working on project have received OSHA 10 Hour certification.

For further technical or administrative information contact Jason Warner, Purchasing Agent at (860) 945-5260 or via email at warner@watertownct.org.
PLEASE

IT IS A REQUIREMENT OF THIS BID THAT EACH PROPOSAL SUBMITTED MUST HAVE A DUPLICATE COPY ATTACHED.

YOUR COOPERATION IS APPRECIATED
Sent by certified mail

November 19, 2013

Roy Cavanaugh, Director
Department of Public Works
61 Echo Lake Road
Watertown Connecticut 06795

Dear Mr. Cavanaugh:

The Conservation Commission/Inland Wetland Agency of the Town of Watertown at a regular meeting held on October 16, 2013 voted to approve application #877 subject to conditions to conduct regulated activities associated with the reconstruction of existing roads and construction of a new parking lot within upland review area at Veterans Memorial Park, 570 Nova Scotia Hill Road, Watertown, CT.

Legal Notice of Approval appeared in the Town Times on October 17, 2013. Your permit is enclosed. Please feel free to contact this office if you have any questions concerning this permit.

Sincerely,

Moosa M. Rayey
Wetlands Enforcement Officer

CC: Lisa Carew
This approval permit refers to your application to conduct regulated activities in the Town of Watertown.

The Conservation Commission/Inland Wetland Agency of the Town of Watertown has considered application #877 with due regard for the matters listed in Section 10 of the Inland Wetlands and Watercourses Regulations of the Town of Watertown. The Commission has found that the proposed activities as shown on a site plan entitled "Veterans Park Improvements Site Plan Veterans Memorial Park Pavement Rehabilitation and General Improvements Sheet 1 dated 8-21-2013 prepared by Town of Watertown Department of Public Works Division of Engineering" as specified and conditioned below conform to the purpose and provision of said section.

The regulated activities consist of the following:

1. Disturbance of approximately 60,984 Sq. Ft (1.4 acre) upland review area for reconstruction of an existing paved road, new sidewalk, new parking lot and associated driveway, and a boardwalk.

2. Installation of erosion and sediment control measures within regulated areas.

The permit is issued subject to the following conditions and/or modifications:

1. The permittee shall notify Wetlands Enforcement Officer, in writing at least three business days prior to the commencement of work onsite and upon its completion.

2. If the approved activities are not initiated on or before October 17, 2018, said activities shall cease and, if not previously revoked or specifically renewed or extended, this permit shall be null and void. Any request to renew or extend the expiration date of a permit should be filed in accordance with Section 11 of the Inland Wetlands and Watercourses Regulations of the Town of Watertown. Expired permits may not be renewed and the wetland agency may require a new application for regulated activities.
3. All work and all regulated activities conducted pursuant to this approval shall be consistent with the terms and conditions of this permit. Any structures, excavation, fill, obstructions, encroachment, or regulated activities not specifically identified and approved herein shall constitute a violation of this permit and may result in its modification, suspension, or revocation.

4. This permit is not transferable without the written consent of the Conservation Commission/Inland Wetland Agency.

5. In evaluating this application, the wetland agency has relied on information provided by the applicant. The Agency has also relied on the State Department of Environmental Protection and Department of Transportation review of the project plans. If such information is subsequently proved to be false, incomplete, or misleading, this permit may be modified, suspended, or revoked and the permittee may be subject to any other remedies or penalties provided by law.

6. No equipment or material including without limitation fill, construction materials, or debris, shall be deposited, placed or stored in any wetland or watercourse and upland review area on or off site unless specifically approved by this permit.

7. This permit is subject to and does not derogate any rights or powers of the Town of Watertown, conveys no property rights or exclusive privileges, and is subject to all public and private rights and to all applicable federal, state and local laws. In conducting and maintaining any activities approved herein, the permittee may not cause pollution, impairment, or destruction of the inland wetlands and watercourses of the Town of Watertown.

8. If the activity approved by the inland wetlands permit also involves activity or a project that requires State DEEP, zoning approval, special permit, variance, or special exception, no work pursuant to the wetlands permit may begin until such approval is obtained.

9. The permittee shall install and maintain erosion and sediment control measures at the site in such an operable condition as to prevent the pollution of wetlands and watercourses. Said controls are to be inspected by the permittee for deficiencies at least once per week and immediately after rains. The permittee shall correct any such deficiencies within 24 hours of said deficiency being found.

10. Reduce pavement width of the existing road from 20 foot to 14 foot and add 5 foot wide grass shoulder and install 5 foot wide asphalt side walk along the roadway.

11. Porous concrete shall be used for the surface of the new parking lot to eliminate the need for construction of a detention pond within upland review area.
12. Wetland Enforcement Officer is authorized to approve minor changes to the plan during construction if such changes are required due to the site condition.

This authorization constitutes the permit required by Section 22a-42 of the Connecticut General Statute, as amended.
TOWN OF WATERTOWN
WATERTOWN, CONNECTICUT

TECHNICAL SPECIFICATIONS

Water Main Installation
Veterans Park
570 Nova Scotia Hill Road
Watertown Public Works Department

Bidders shall:

- Provide a list of equipment available for the project
- Provide a list of references for work performed over the last five years in the State of Connecticut

Project Description

This project consists of the provision of two gate valves, installation of one town-supplied fire hydrant, concrete thrust blocks, and installation of approximately 845 linear feet of 8-inch High Density Polyethylene and Ductile Iron Piping, gate valves, fire hydrant and incidental related work in Veterans Park, 570 Nova Scotia Hill Road in Watertown, Connecticut.

TECHNICAL SPECIFICATIONS

All work is to be performed in accordance with the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction, Form 816", as supplemented and as amended below.

Trafficmen:
Uniformed Police Officers will not be required. Otherwise the contractor is responsible for Maintenance and Protection of traffic. Park will be open during normal hours, except by special arrangement in advance, and accommodations must be made for public access.
TECHNICAL SPECIFICATIONS
CLEARING AND GRUBBING

Description:

The work under the item for “Clearing and Grubbing” consist of clearing the ground of trees, stumps, brush, rubbish and all objectionable material in accordance with the specifications or as directed by the Town. This work shall also include the preservation from injury or defacement of vegetation and objects designated to remain. All wood greater than three inches (3”) in diameter will be cut to four foot (4’) lengths and left stacked on owner’s property.

Construction Methods

The construction methods shall be in accordance with 2.01.03 of the Form 816, as amended. Trees, stumps, brush and other vegetative waste may be disposed of on-site, at no charge to the Contractor, in the location(s) directed by the Town.

Method of Measurement

This work will not be measured for payment.

Basis of Payment

Payment for this work will be at the contract lump sum price for “Clearing and Grubbing,” which price shall include all equipment, tools, and labor incidental to the completion of this item. All costs incidental to the disposal of trees, stumps, etc., will be included in the price of “Clearing and Grubbing.”
TECHNICAL SPECIFICATIONS
EXCAVATION, BACKFILL AND COMPACTION

Description

Excavation for trench shall be performed in accordance with the pay limits as shown on the plans. Rock, if encountered, shall be handled in accordance with Section 2.05 of the Form 816, “Standard Specifications for Roads, Bridges and Incidental Construction”, as amended. Contractor is responsible for dewatering and dust control, which cost shall be paid for in the price bid for this or other items. Excavation shall also include stripping of topsoil, saw cutting of pavements, removal, handling and disposal of any and all materials encountered within the limits of work, and shall include all pumping, bailing, draining, sheeting, shoring, bracing, coffer damming and protection thereto. Trench, rock, must be in definite ledge formation or comprise boulders, portions of boulders, cement-masonry structures or concrete structures, each discrete object a minimum of one cubic yard or more in volume. Notify Town immediately upon the need for trench rock item.

Construction Methods

1. The excavation of existing material, in accordance with the Requirements of Article 2.03 of the Form 816, as amended. Surplus material is the responsibility of the Contractor.
2. Processed gravel base – in accordance with the Requirements of Article 3.04 of the Form 816, as amended. Contractor is directed to reuse suitable reclaimed material for use for this purpose.
3. Pervious structure backfill – in accordance with the Requirements of Article 2.16 of the Form 816, as amended, except that payment will be included in the item for which it is required.
4. Pavement shall be cut as required with a pneumatic tool or saw, removed and disposed of off-site by the contractor.
5. All suitable material removed in making the excavation shall be used as backfill where required as specified elsewhere.
6. When tree roots are cut, they shall not be mutilated. The ends shall be cut off smoothly, without splitting or shattering. The trunks of trees shall be carefully protected from damage, and if unavoidable damage occurs, the injured portions shall be neatly trimmed. Power driven excavation machinery shall be handled with care to prevent damage to shade trees, particularly to overhanging branches and branches shall not be cut off except with special permission by Town.
7. Geotextile material – in accordance with the Requirements of Article 7.55 of the Form 816, as amended, except that payment shall be included in that of other item for which work is required, as shown on plans or as directed by Town.
8. Town will furnish baseline and benchmark for installation of improvements. Contractor to provide all other field survey required. Owner to perform as-built survey upon completion of fieldwork.

9. The cost for clearing and grubbing shall be in accordance with the terms and conditions of Section 2.01 of the Form 816 which shall apply.

10. Blasting shall not be allowed for trench rock. All rock excavation shall be accomplished by mechanical removal only.

11. Contractor shall, in presence of Town, take detailed profile measurements of the trench rock for the basis of measuring trench rock quantities based upon payment limits. Any trench rock removed by Contractor without prior measurement by Town will not be allowed for payment.

Method of Measurement

This work will be measured for payment by the following:

1. Number of cubic yards of material or trench rock excavated, regardless of type, within the pay limits as shown on the drawings as required or as directed and approved by the Owner. Clearing and grubbing shall not be measured for payment but shall be bid as a lump sum item.

Basis of Payment

This work will be paid for as follows:

1. Contract unit price per cubic yard of material excavated under trench excavation or trench rock, complete in place and accepted, which price shall include all equipment, material, labor and work incidental thereto as specified herein.
TECHNICAL SPECIFICATIONS
WATER DISTRIBUTION SYSTEM

Description

A. Provide all plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to furnish and install the work of this Section, complete and in place.

B. The work of this Section includes:

1. Selective clearing and thinning of trees, brush, shrubbery, etc. Comply with ConnDOT Form 816, Article 9.52.01.
2. Construction staking of all water mains and appurtenances in this Section. Comply with ConnDOT Form 816, Article 9.80.01.
3. Trench excavation and backfill, excluding rock-in-trench excavation, but including removal and disposal of existing water mains and valves, miscellaneous pipes and other obstructions, existing pavement, curbs, and walks, etc. Comply with ConnDOT Form 816, Article 2.05.01.
4. Design, installation, maintenance, operation, and protection of all pumping, bailing, draining, sheeting, shoring, and cofferdams necessary to successfully construct the work.
5. The removal, handling, protection, and resetting of hedges, small trees, shrubbery, signs, posts, guide rails, mail boxes, and the like.
6. The bracing of utility poles in close proximity to the excavation.
7. Furnish and install water main pipe bedding.
8. Furnish and install new water mains, tapping sleeves and tapping valves, gate valves, restrained joints, tees (excluding hydrant tees), bends, reducers, end caps, thrust blocks, cutting and capping of existing mains, insulation, magnetic indicating tape, and all other related fittings and work.
9. Flush and disinfect new water mains and appurtenances.
10. Provide combined pressure and leakage tests on the new water main and appurtenances.

1.0 RELATED DOCUMENTS

A. The publications listed below form a part of this specification to the extent referenced. These publications are referred to in the text by the basic designation only.
2.0 SUBMITTALS

A. Shop Drawings

1. Prepare and submit shop drawings for the following items:
   a. Trench dewatering system components.
   b. Pressure and leakage testing system components.

B. Product Data

1. Procure and submit product data for the following items:
   a. Ductile iron pipe
   b. Mechanical joint fittings, including but not limited to tees, bends, reducers, solid sleeves, end caps, and other related fittings.
   c. Polyethylene encasement
   d. Rubber gaskets for push-on joints
   e. Field-Lok™ gaskets, if proposed for use
   f. Tapping sleeves and tapping valves
   g. Gate valves
   h. Mechanical thrust restraint for push-on joint and mechanical joint pipe
   i. Rigid board insulation
   j. Lubricant (Pipe Soap)

C. Samples

1. Procure and submit samples for the following items:
   a. Gradation test from a certified material testing laboratory for water main bedding material.

D. Design Drawings

1. Prepare and submit the following design drawings. All design drawings shall be signed and sealed by an engineer registered in the State of Connecticut:
   a. **Excavation Plan** - The excavation plan shall outline the methods and procedures that the Contractor will employ to
successfully stabilize excavations, as required to construct the work.

b. Trench Dewatering Plan - The trench dewatering plan shall outline the methods and procedures that the Contractor will employ to successfully dewater trenches and dispose of the dewatering wastewater, including measures for erosion control and sediment removal.

E. Product Test Data:

1. Submit product test data to the Engineer for the following items. All tests shall be conducted by a qualified material testing laboratory and sealed by a licensed professional engineer in the State of Connecticut.
2. Gradation test for water main bedding material.

F. Contractor Permits

1. Submit copies of the following Contractor-acquired permits to the Engineer:
   k. All permits required by Federal, State, and Local authorities.

G. Miscellaneous Items

1. Prepare and submit the following miscellaneous items to the Engineer:
   a. Potable water test results for each segment of water main tested.
   l. Pressure and leakage test results for each segment of water main tested.

3.0 PROJECT CONDITIONS

A. Coordinate the trench dewatering plan with the requirements outlined in the project’s Soil Erosion and Sediment Control Plan and in any conditions set forth in the project’s land-use permits.

4.0 SEQUENCING

A. Provide written notice of all planned shutdowns to all affected customers, the Owner, and Engineer at least 24 hours prior to commencement of shutdown.

B. Disinfect, flush, and conduct potable water tests before commencement of pressure and leakage testing.
C. Coordinate sequencing of flushing, disinfection, and pressure and leakage testing with the Engineer.

MATERIALS

1.0 TRENCH EXCAVATION

A. Furnish appropriate equipment and products (as approved by the Engineer) for treatment and disposal of trench dewatering wastewater.

B. Furnish materials and products required for safe and effective bracing and shoring of the trench excavation.

2.0 WATER MAIN BEDDING

A. Comply with ConnDOT Form 816, Article M.03.01 - Item 2 (FINE AGGREGATE).

3.0 DUCTILE IRON PIPE

A. Pipe for water mains shall be ductile iron, meeting all requirements of ANSI/AWWA C151/A21.51.

1. Acceptable Manufacturers include:
   a. U. S. Pipe
   b. Griffin Pipe
   m. Atlantic States Pipe
   n. Clow Corporation.
2. Pipe thickness shall meet all requirements of AWWA C150/A21.50 – Class 52.

2. All piping shall be cement-lined (double-thickness) with seal coat inside and out in accordance with AWWA C104/A21.4.

3. All pipe joints (unless otherwise specified on the plans or these specifications), shall be push-on joints, employing a single rubber gasket, to affect a watertight seal. The push-on joint shall be the “Tyton” joint pipe, as manufactured by U.S. Pipe or equivalent.

4. Rubber gasket joints shall conform to AWWA C111/A21.11.

5. All interior applied coatings, field lubricants used to make joints, etc. shall meet NSF Standard 61.

B. Use Dresser Style 38 or equivalent couplings for joining plain ends of cast iron or ductile iron pipes in non-thrust-restraint zones.

4.0 DUCTILE IRON FITTINGS

A. Fittings for water mains shall be the ductile iron compact mechanical joint fittings, meeting all requirements of AWWA C153/A21.53.

1. Fittings include but may not be limited to all tees, bends, reducers, end caps, and plugs.

2. Fittings shall have pressure rating at least 350 PSI, or an equivalent pressure rating to that of the pipe, whichever is greater.

3. All fittings shall be cement lined (double thickness), with seal coat inside and out, in accordance with AWWA C104/A21.4

5.0 TAPPING SLEEVES AND VALVES:

A. Tapping Sleeves: Use Mueller Model H-615 tapping sleeve, or approved equal by the engineer.

B. Tapping Valves:

1. Use non-rising stem, meeting AWWA C509 Standards. Valves shall open right. Acceptable manufacturers include:
   a. Mueller
   2. Valves shall open to the LEFT.

6.0 GATE VALVES (12-INCH DIAMETER AND SMALLER)

A. Use resilient seated, iron body, bronze mounted resilient wedge, “O-ring” seal, with mechanical joint ends and non-rising inside screw for underground valves, conforming to the requirements of AWWA C509.
1. Valves 12 inches and smaller shall be designed for a working pressure of 200 pounds per square inch.
2. Valves shall have a clear waterway equal to the full nominal diameter of the valve.
3. Valves shall open to the **LEFT**.
4. Provide stationary rods for all valves.
5. Acceptable manufacturers include:
   a. Muller
   b. Kennedy
   c. Clow
   d. M & H
7.0  THRUST RESTRAINT

A.  Primary Thrust Restraint – Ductile Iron Pipelines:

1.  For restraint of mechanical joints at all ductile iron fittings and gate valves, use Megalug Series 1100 mechanical joint restraint by EBAA Iron Co. or equivalent product. Mechanical joint restraint shall be capable of withstanding a sustained pressure of 150 PSI and intermittent pressure of 300 PSI within the water mains.

2.  For restraint of push-on joints within thrust-restraint zones, use Megalug Series 1700 joint restraint by EBAA Iron Co. or equivalent product. Push-on joint restraint shall be capable of withstanding a sustained pressure of 150 PSI and intermittent pressure of 300 PSI within the water mains.

B.  Redundant Thrust Restraint (All Pipelines > 2-inch Diameter)

1.  Use pre-cast concrete thrust blocks of the size and shape indicated on the Contract Drawings to provide redundant thrust restraint at horizontal or vertical bends and tees. Pre-cast concrete blocks shall comply with ConnDOT Form 814 – Article M.08.02 – Item 2 “Concrete Building Brick for Catch Basins, Manholes, or Drop Inlets”.

8.0  PIPE JOINT PROTECTION

A.  Use “Mueller Series 200 Bell Joint Repair Clamps” or equivalent, where indicated on the Contract Drawings or where directed by the Engineer, to protect pipe joints in close proximity to sanitary sewer manholes.

9.0  COPPER WATER AND HDPE PIPE AND COUPLINGS

A.  Copper Water Mains: Use soft, annealed, seamless copper tubing, conforming to ASTM B88, Type K.

B.  Couplings: Use appropriate, compression couplings conforming to ANSI Standard B16.26 to join lengths of new pipe and to join new pipe to existing, small-diameter water mains.

C.  Polyethylene water lines: conform to AWWA C-901, 200 psi pressure rated. Provide full coils wherever possible, to minimize joints. Provide brass inserts and double pipe clamps at all joints.

10.0  BALL VALVES (2-inches and smaller)
11.0 RIGID FOAM INSULATION

A. Use rigid foam insulation of the sizes and types indicated on the Contract Drawings or as directed by the Engineer to protect water mains from potential freezing conditions. Rigid foam insulation shall possess the following characteristics:

1. Rigid closed-cell, expanded polystyrene board.
2. 1.5-inch thick extruded board
3. Comply with FS-HH-I-524, Type II, Class B.
4. Compressive strength: 30 psi.
5. Water adsorption: 1.0 perm per inch maximum.
6. Thermal conductivity: \((K\text{-value at 75o F}) - 0.2\).

B. All insulation, jacketing, and related materials to be utilized in conjunction with this project shall conform to the Contract Drawings and Specifications and must be submitted to the Engineer for approval prior to use.

12.0 UNDERGROUND WARNING TAPE

A. Underground warning tape shall be durable magnetic indicating tape, designed to withstand underground exposure, blue in color, and printed with an appropriate warning message.

13.0 DISINFECTION AND FLUSHING

A. Provide all tools, power, materials, and chemicals necessary to disinfect, test, flush, and de-chlorinate the water main and appurtenances, in conformance with AWWA Standards C600 and C651 and Standards stated in Section 19-13-B102 of Regulations of Connecticut State Agencies.

14.0 PRESSURE TESTING

A. Provide all tools, materials, test plugs, caps, pumps, pipe connections, water meter, pressure gauges, and other equipment required to perform pressure and leakage testing in conformance with AWWA Standard C600.

B. The gauge used in the pressure and leakage testing apparatus shall be a minimum of 4-inches in diameter and pressure increments shall not exceed 2 P.S.I.
15.0 AUTOMATIC AIR RELEASE VALVE

A. Air valves shall be fully automatic float operated valves designed to exhaust large quantities of air during the filling of a piping system and close upon liquid entry.

B. Connections:
   1. Manufacturer shall have a quality management system that is certified to ISO 9001 by an accredited, certifying body.
   2. Valve sizes 3 in. (76 mm) and smaller shall have full size NPT inlets and outlets equal to the nominal valve size. The body inlet connection shall be hexagonal for a wrench connection.
   3. The valve shall have two additional NPT connections for the addition of Air Release Valves, gauges, testing, and draining.

C. Design:
   1. The valve body shall provide a through flow area equal to the nominal valve size. A bolted cover with alloy screws and flat gasket shall be provided to allow for maintenance and repair.
   2. Floats shall be unconditionally guaranteed against failure including pressure surges. The float shall have a hexagonal guide shaft supported in the body by circular bushings to prevent binding from debris. The float shall be protected against direct water impact by an internal baffle.
   3. The resilient seat shall provide drop tight shut off to the full valve pressure rating. The seat shall be a minimum of .5 in. (12 mm) thick on 2 in. (50 mm) and larger valves and secured in such a manner as to prevent distortion. Valves with working pressures above 400 psig (2760 kPa) shall have metal seats with synthetic seals.

D. Materials:
   1. The valve body, cover, and baffle shall be constructed of ASTM A126 Class B cast iron for Class 125 and Class 250 valves. Class 300 ductile iron valves shall be constructed of ASTM A536 Grade 65-45-12 ductile iron. Class 300 steel valves shall be constructed of ASTM A216 Grade WCB cast steel.
   2. The float, guide shafts, and bushings shall be constructed of Type 316 stainless steel. Non-metallic guides and bushings are not acceptable. Resilient seats shall be Buna-N. Class 300 steel valves shall have a 316 stainless steel Seat with Buna-N seal to provide an initial contact to Buna-N with final metal to metal contact to prevent over compression of the resilient seal.

E. Options:
1. Valve interiors and exteriors shall be coated with an NSF/ANSI 61 certified fusion bonded epoxy in accordance with AWWA C550.

F. Manufacture

1. The manufacturer shall demonstrate a minimum of five (5) years experience in the manufacture of air valves. When requested, the manufacturer shall provide test certificates, dimensional drawings, parts list drawings, and operation and maintenance manuals.
2. The exterior of the valve shall be coated with a universal alkyd primer.
3. Air Valves shall be Series 100, model 15A, 1” NPT as manufactured by Val-Matic Valve and Manufacturing Corporation, Elmhurst, IL, USA or approved equal.

Construction Methods

1.0 TRENCH EXCAVATION

A. This item does not include rock-in-trench excavation.

B. Comply with ConnDOT Form 816, Article 2.05.03.

C. Clear and thin trees, brush, and shrubbery, as necessary to construct the work. Comply with ConnDOT Form 816, Article 9.52.03.

D. Stake out all construction items. Comply with ConnDOT Form 816, Article 9.80.03.

E. Remove and dispose of existing water mains and valves, miscellaneous pipes, other obstructions, and existing pavement, curbs, and walks, as necessary, to construct the work.

F. Design, install, maintain, operate and protect all pumping, bailing, draining, sheeting, shoring, and cofferdam facilities necessary to construct the work.

G. Remove, handle, protect, and reset hedges, small trees, shrubbery, signs, posts, guide rails, mail boxes, and other site improvements, as necessary to construct the work.

H. Brace utility poles in close proximity to the excavation, as necessary, to construct the work.

2.0 WATER MAIN BEDDING
A. Comply with ConnDOT Form 816, Article 6.51.03. Use Type II installation procedures.

1. Delete the dimensions referred to in Article 6.51.03 and replace with the dimensions shown on the Contract Drawings.
2. Delete references to “culverts’ and replace with references to “water main pipe”.

3.0 DUCTILE IRON PIPE

A. Comply with AWWA Standard C600.

B. Flush and disinfect all ductile iron pipes constructed under this Contract in accordance with requirements outlined elsewhere in this specification.

C. Conduct pressure and leakage tests on all ductile iron pipes constructed under this Contract in accordance with requirements outlined elsewhere in this specification.

D. Cut, cap, and restrain existing water mains where indicated on the Contract Drawings.

4.0 DUCTILE IRON FITTINGS

A. Comply with AWWA Standard C600

B. Restrain mechanical joints at all fittings as described elsewhere in this specification.

5.0 GATE VALVES (12 INCHES AND SMALLER)

A. Comply with AWWA Standards C600, C500-Appendix A, and C509 Appendix A.

B. Restraint mechanical joints at gate valves as described elsewhere in this specification

6.0 THRUST RESTRAINT

A. Primary Thrust Restraint – Ductile Iron Pipelines:

1. Install mechanical joint restraint on all ductile iron fittings and gate valves in strict compliance with manufacturer’s instructions.
2. Install restraint harnesses on push-on joints within thrust-restraint zones in strict compliance with manufacturer’s instructions.
B. Redundant Thrust Restraint (All Pipelines > 2-inch Diameter)

1. Use pre-cast concrete thrust blocks of the size and shape indicated on the Contract Drawings to provide redundant thrust restraint at horizontal or vertical bends and tees.

2. Place all thrust blocks firmly between the fitting and trench wall, in an alignment that coincides with the direction of thrust.

7.0 PIPE JOINT PROTECTION

A. Furnish and install bell joint repair clamps where indicated on the Contract Drawings or directed by the Engineer.

B. Install bell joint repair clamps in strict compliance with manufacturer’s instructions.

8.0 BALL VALVES (2 INCHES AND SMALLER)

A. Comply with AWWA Standards C600 and C800.

9.0 RIGID FOAM INSULATION

A. Contact the Engineer immediately for insulation instructions if field conditions warrant substandard cover.

B. Furnish and install rigid foam insulation as directed by the Engineer

10.0 UNDERGROUND WARNING TAPE

A. Furnish and install continuous underground warning tape at the depth indicated in the Contract Drawings. Center the warning tape above new water mains. Departure from true centerline of water main shall not exceed six inches.

11.0 DISINFECTION AND FLUSHING

A. Disinfect all new water mains completed under this Contract. Comply with AWWA Standard C600 and C651.

B. Thoroughly flush all pipelines prior to the disinfection process.
C. Install a double check-valve between the test-water source and the new water distribution system. Provide other safety measures as may be required.

D. Following the disinfection process, thoroughly flush all pipelines before sampling for tests.

E. Following the flushing process, retrieve and convey test samples to a certified water testing laboratory. Water samples shall be analyzed for coliform bacteria, heterotrophic plate count (HPC), and physical parameters (pH, Color, Odor, Turbidity), Total Chlorine Residual. To pass, test results must reveal total coliform (TC) = 0 and heterotrophic plate count (HPC) <100 colonies/mL.

F. If, the Owner and/or Engineer determine that the disinfection process failed, repeat the entire disinfection process to the satisfaction of the Owner, at no cost to the Owner, and without extension of time for completion of the work.

G. Dispose of all chlorinated test water in accordance with local, state, and federal regulations (which may require de-chlorination). Obtain all required discharge permits prior to start of the disinfection process.

12.0 PRESSURE AND LEAKAGE TESTING

A. Conduct pressure and leakage testing on all new water mains completed under this contract. Comply with AWWA Standard C600.

B. If hydrants or blow-offs are not available for releasing air, excavate at high points, tap the main, and install a plug for air release. Install plug and backfill the excavation following successful completion of the test.

C. If the section shall fail to pass the pressure and leakage test, locate, uncover, retest and repair or replace the defective pipe, fitting or joint, all at no cost to the Owner and without extension of time for completion of the work. Make additional tests and repairs until the section passes the specified tests.

D. The Owner will provide at no charge to the Contractor, the necessary water for this initial pressure and leakage tests. If this initial test fails, the Owner will charge the Contractor for all subsequent required water.

13.0 AUTOMATIC AIR RELEASE VALVE

A. NSF/ANSI 372 Certified Lead-Free by WQA
B. Certified to NSF/ANSI 61

C. Meets AWWA C512 requirements

Method of Measurement

A. New water mains shall be measured as the actual linear feet of that size pipe measured in place along the centerline of the pipe installed in accordance with these Contract Drawings and Specifications, through pipe, fittings, valves, appurtenances, testing, and all other work not measured or paid for under any other item.

Basis of Payment

A. The water mains shall be paid for at the Contract Unit Price of the specified items. Seventy five (75) percent of the unit price will be payable once the mains are installed, with the remaining 20% payable once the water quality and pressure and leakage tests are approved by the owner, with 5% held as retainage.

B. Water main fittings and appurtenances shall be paid for at the Contract unit price for that type and size of fitting.

C. Automatic air release valves shall be paid for at the contract lump sum price for Automatic Air Release Valve.
TECHNICAL SPECIFICATIONS
HIGH DENSITY POLYETHYLENE PIPE AND FITTINGS

Description

1.01 DESCRIPTION

A. Scope – This section specifies high density polyethylene pipe (HDPE) and fittings for water utility use as indicated on the Drawings, and as specified herein.

- Furnish, install and test HDPE pipe as indicated and specified in this section, and as referred to in related sections, and the Drawings.
- The primary installation method is burial. The means and methods, including the testing for acceptance shall conform to all applicable standards as noted herein with the intention of providing a leak free system to the owner.

B. Special Instructions – All work is to conform to the terms and conditions of the Inland Wetlands permit attached.

1.02 REFERENCES

A. To the extent referenced in this specification section, the standards and documents listed below are included, and made a part of this specification.

B. In the event of a conflict, the requirements of this specification section prevail.

C. Unless otherwise specified, references to documents shall mean the latest published edition of the referenced document in effect at the bid date of the project.

ANSI/AWWA www.awwa.org

- ANSI/AWWA C901-08 Polyethylene (PE) Pressure Pipe and Tubing, 1/2 in. (13 mm) through 3 in. (76 mm) for Water Service

- ANSI/AWWA C906-07 Polyethylene (PE) Pressure Pipe and Fittings, 4 in. (100 mm) through 63 in. (1,600 mm) for Water Distribution and Transmission

- ANSI/AWWA C651 Standard for Disinfecting Water Mains


Plastics Pipe Institute, PPI www.plasticpipe.org
- PPI Handbook of Polyethylene Pipe – 2009 (2nd Edition)
- PPI TR-33 Generic Butt Fusion Joining Procedure for Polyethylene Gas Pipe
- PPI TR-34 Disinfection of Newly Constructed Polyethylene Water Mains
- PPI TR-41 Generic Saddle Fusion Joining Procedure for Polyethylene Gas Piping

**NSF** [www.nsf.org](http://www.nsf.org)

- NSF / ANSI 61 Drinking Water System Components – Health Effects

**ASTM** [www.astm.org](http://www.astm.org)

- ASTM F 714 Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
- ASTM F905 Standard Practice for Qualification for Polyethylene Saddle-Fused Joints
- ASTM F 1055 Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing
- ASTM F 1290 Standard practice for Electrofusion Joining Polyolefin Pipe and Fittings
- ASTM F 1417 Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
- ASTM F 2164 Standard Practice for Field Leak Testing for Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure
- ASTM F 2206 Standard Specification for Fabricated Fittings of Butt-Fused Polyethylene (PE) Plastic Pipe, Fittings, Sheet Stock, Plate Stock, or Block Stock
- ASTM D 2239 Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter
- ASTM D 2321 Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications

- ASTM F 2620 Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings

- ASTM D 2683 Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing

- ASTM D 2737 Standard Specification for Polyethylene (PE) Plastic Tubing

- ASTM D 2774 Standard Practice for Underground Installation of Thermoplastic Pressure Piping


- ASTM D 3350-08 Standard Specification for Polyethylene Plastics Pipe and Fittings Materials

1.03 SYSTEM DESIGN PARAMETERS

A. The polyethylene system working pressure rating accommodates the normal operating pressure and the repetitive surges. The pressure rating applies at 80°F or less.

B. Per AWWA 901 and C906, the repetitive surge pressure allowance is one half the pressure class of the pipe, and the occasional surge over pressure allowance is equal to the pressure class of the pipe. Allowable Total Pressure during Recurring Surge conditions equals 1.5 times the pipe’s pressure class. Allowable Total Pressure during Occasional Surge conditions equals 2.0 times the pipe’s pressure class.

Table 1 gives the Pressure Class per AWWA C901, Pressure Rating and Allowable Total Pressure During Recurring and Occasional Surge for PE4710 pipe at 80°F or less. For PE 3608, refer to Table 2.

**Table 1. Pressure Class per AWWA C901 for PE 4710 at 80°F or Less**

<table>
<thead>
<tr>
<th>Pipe Dimension Ratio (DR)</th>
<th>Pressure Class</th>
<th>Pressure Rating</th>
<th>Allowable Total Pressure During Recurring Surge</th>
<th>Allowable Total Pressure During Occasional Surge</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR 9</td>
<td>250 psi</td>
<td>250 psi</td>
<td>375 psi</td>
<td>500 psi</td>
</tr>
</tbody>
</table>
Table 2 gives the Pressure Class per AWWA C901 and C906. Pressure Rating and Allowable Total pressure During Recurring and Occasional Surge for PE3608 pipe at 80°F or less

Table 2. Pressure Class per AWWA C901 and C906 for PE 3608 at 80°F or Less

<table>
<thead>
<tr>
<th>DR 11</th>
<th>200 psi</th>
<th>200 psi</th>
<th>300 psi</th>
<th>400 psi</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR 14.3</td>
<td>150 psi</td>
<td>150 psi</td>
<td>225 psi</td>
<td>300 psi</td>
</tr>
<tr>
<td>DR 17</td>
<td>125 psi</td>
<td>125 psi</td>
<td>185 psi</td>
<td>250 psi</td>
</tr>
<tr>
<td>DR 21</td>
<td>100 psi</td>
<td>100 psi</td>
<td>150 psi</td>
<td>200 psi</td>
</tr>
</tbody>
</table>

1.04 SUBMITTALS

A. Quality Assurance/control Submittals

1. Affirmation that product shipped meets or exceeds the standards set forth in this specification. This shall be in the form of a written document from the manufacturer attesting to the manufacturing process meeting the standards.

2. Manufacturer’s recommended fusion procedures for the products.

1.05 DELIVERY – STORAGE – HANDLING

A. Handle the pipe in accordance with the PPI Handbook of Polyethylene Pipe (2nd Edition), Chapter 2 using approved strapping and equipment rated for the loads encountered. Do not use chains, wire rope, forklifts or other methods or equipment that may gouge or damage the pipe or endanger persons or property. Field storage is to be in compliance with AWWA Manual of Practice M55 Chapter 7.

B. If any gouges, scrapes, or other damage to the pipe results in loss of 10% of the pipe wall thickness, cut out that section or do not use.
Materials

2.01 PIPE

A. Polyethylene pipe shall be made from HDPE material having a material designation code of PE3608 or higher. The material shall meet the requirements of ASTM D 3350 and shall have a minimum cell classification of PE345464C. In addition, the material shall be listed as meeting NSF-61.

B. The pipe and fittings shall meet the requirements of AWWWA C906.

C. HDPE pipe shall be rated for use at a pressure class of 200 psi.

2.02 FITTINGS

A. Butt Fusion Fittings – Fittings shall be made of HDPE material with a minimum material designation code of PE3608 and with a minimum Cell Classification as noted in 2B.01A. Butt Fusion Fittings shall meet the requirements of ASTM D 3261. Molded and fabricated fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans. All fittings shall meet the requirements of AWWA C906.

Markings for molded fittings shall comply with the requirements of ASTM D 3261. Fabricated fittings shall be marked in accordance with ASTM F 2206. Socket fittings shall meet ASTM D 2683.

B. Electrofusion Fittings – Fittings shall be made of HDPE material with a minimum material designation code of PE 3608 and with a minimum Cell Classification as noted in 2B.01A. Electrofusion Fittings shall have a manufacturing standard of ASTM F 1055. Fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans. All electrofusion fittings shall be suitable for use as pressure conduits, and have nominal burst values of four times the Working Pressure Rating (WPR) of the fitting. Markings shall e according to ASTM F 1055.

C. Flanges and Mechanical Joint Adapters (MJ Adapters) – Flanges and Mechanical Joint Adapters shall have a material designation code of PE3608 or higher and a minimum Cell Classification as noted in 2B.01A. Flanged and Mechanical Joint Adapters can be made to ASTM D 3261 or if machined, must meet the requirements of ASTM F 2206. Flanges and MJ Adapters shall have a pressure rating equal to the pipe unless otherwise specified on the plans. Markings for molded or machined flange adapters or MJ Adapters shall be per ASTM D 321. Fabricated (including machined) flange adapters shall be per ASTM F 2206. Van-Stone style, metallic (including stainless steel), convoluted or flat-plate,
back-up rings and bolt materials shall follow the guidelines of Plastic Pipe Institute Technical Note #38, and shall have the bolt-holes and bolt-circles conforming to one of these standards: ASME B-16.5 Class 150, ASME B-176.47 Series A Class 150, ASME B-16.1 Class 125, or AWWA C207 Class 150 Series B, D, or E. The back-up ring shall provide a long-term pressure rating equal to or greater than the pressure-class of the pipe with which the flange adapter assembly will be used, and such pressure rating shall be marked on the back-up ring. The back-up ring, bolts and nuts shall be protected from corrosion by a system such as paint, coal-tar epoxy, galvanization, polyether or polyester fusion bonded epoxy coatings, anodes, or cathodic protection, as specified by the project engineer.

D. Service connections shall be electrofusion saddles with a brass or stainless steel threaded outlet, electrofusion saddles, sidewall fusion branch saddles, tapping tees, or mechanical saddles.

For electrofusion saddles with threaded outlet the size of the outlet shall be one inch IPS unless a larger size is shown on the plans. Electrofusion saddles shall be made from materials required in Part B - Electrofusion Fittings.

For sidewall fusion saddles the size of the saddle shall be as indicated on the plans. The saddle can be made in accordance to ASTM D 3261 or ASTM F 2206. After installation, approximately 1/4 inch of the PE pipe shall be visible beyond the saddle to confirm that proper surface preparation occurred. Saddle faces that do not provide 1/4 inch of area beyond the saddle are not acceptable.

Tapping tees shall be made to ASTM D 3261 or D 2683.

Mechanical strap-on saddles can only be used where there use on PE pipe is approved by the mechanical saddle manufacturer. The body of the saddle shall be stainless steel, epoxy coated cast iron or brass. The basket material and design must be acceptable for PE pipe. The outlet shall be threaded for one inch IPS unless a larger size is shown on the plans. Mechanical strap-on saddles will be installed per the manufacturer’s instructions.

2.03 PIPE AND FITTING IDENTIFICATION

A. The pipe shall be marked in accordance with the standards to which it is manufactured. (or alternative as above).

B. Color identification by the use of stripes on pipe to identify pipe service shall be optional. If used, stripes or colored exterior pipe product shall be
blue for potable water, or green for wastewater/sewage, or purple (lavender) for reclaimed water. (Optional).

C. Tracing wire shall be placed parallel and above, but separate from the pipe and shall be 10 AWG or engineer approved equal.

D. Marking tape shall be approved by the engineer and placed between 6 and 23 inches above the crown of pipe (Optional).

Construction Methods

3.01 JOINING METHODS

A. Butt Fusion: The pipe shall be joined by the butt fusion procedure outlined in ASTM F 2620 or PPI TT-33. All fusion joints shall be made in compliance with the pipe or fitting manufacturer’s recommendations. Fusion joints shall be made by qualified fusion technicians per PPI TN-42.

B. Saddle Fusion: Saddle fusion shall be done in accordance with ASTM F 2620 or TR-41 or the fitting manufacturer’s recommendations and PPI TR-41. Saddle fusion joints shall be made by qualified fusion technicians. Qualification for the fusion technician shall be demonstrated by evidence of fusion training within the past year on the equipment to be unitized on this project. (Saddle fusion is used to fuse branch saddles, tapping tees, and other HDPE constructs onto the wall of the main pipe) (ASTM F905).

C. Electrofusion: Electrofusion joining shall be done in accordance with the manufacturer’s recommended procedure. Other sources of electrofusion joining information are ASTM F 1290 and PPI TN 34. The process of electrofusion requires an electric source, a transformer, commonly called an electrofusion box that has wire leads, a method to read electronically (by laser) or otherwise input the barcode of the fitting and a fitting that is compatible with the type of electrofusion box used. The electrofusion box must be capable of reading and storing the input parameters and the fusion results for later download to a record file. Qualification of the fusion technician shall be demonstrated by evidence of electrofusion training within the past year on the equipment to be utilized for this project.

D. Mechanical:

1. Mechanical connection of HDPE to auxiliary equipment such as valves, pumps, and fittings shall use mechanical joint adapters, and other devices in conformance with the PPI Handbook of Polyethylene Pipe, Chapter 9 and AWWA Manual of Practice M55, Chapter 6.
2. Mechanical connections on small pipe under 3 inches are available to connect HDPE pipe to other HDPE pipe, or a fittings, or to a transition to another material. The use of stab-fits type couplings is allowed, along with the use of metallic couplings of brass and other materials. All mechanical and compression fittings shall be recommended by the manufacturer for potable water use. When a compression type or mechanical type of coupling is used, the use of a rigid tubular insert stiffener inside the end of the pipe is recommended.

3. Mechanical couplings that wrap around the pipe and act as saddles are made by several manufacturers specifically for HDPE pipe. All such saddles, tapping saddles, couplings, clamps, etc. shall be recommended by the manufacturer as being designed for use with HDPE pipe at the pressure class listed in this section.

4. Unless specified by the fitting manufacturer, a restraint harness or concrete anchor is recommended with mechanical couplings to prevent pullout.

5. Mechanical coupling shall be made by qualified technicians. Qualification of the field technician shall be demonstrated by evidence of mechanical coupling training within the past year. This training shall be on the equipment and pipe components to be utilized for this project.

E. Joint Recording – The critical parameters of each fusion joint, as required by the manufacturer and these specifications, shall be recorded either manually or by an electronic data logging device. All fusion joint data shall be included in the Fusion Technician’s joint report.

F. The specified is referred to the list of manufacturers as shown on the PPI website http://plasticpipe.org/municipal_pipe/mi_members.html.

3.02 INSTALLATION

A. Buried HDPE pipe and fittings shall be installed in accordance with ASTM D 2321 or ASTM D 2774 for pressure systems and AWWA Manual of Practice M55 Chapter 7.

B. Pipe Embedment – Embedment material should be Class I, Class II, or Class III, materials as defined by ASTM D 2321 Section 6. The use of Class IV and Class V materials is not recommended, however it may be used only with the approval of the engineer and appropriate compaction.
C. Bedding: Pipe bedding shall be in conformance with ASTM D 2321 Section 8. Compaction rates should be as specified in ASTM D 2321. Deviations shall be approved by the Town.

D. Haunching and backfill shall be as specified in ASTM D 2321 Section 9 with Class I, II, or III materials. Compaction shall be in excess of 85% Proctor.

3.03 TESTING

A. Hydrostatic leakage testing is recommended and shall comply with ASTM F-2164, ASTM F 1412, AWWA Manual of Practice M55 Chapter 9, and PPI Handbook of Polyethylene Pipe Chapter 2 (2nd Edition). If the test section fails this test, the Contractor shall repair or replace all defective materials and/or workmanship at no additional cost to the Owner.

B. Pneumatic (compressed air) leakage testing of HDPE pressure piping is prohibited for safety reasons.

3.04 CLEANING AND DISINFECTING

A. Cleaning and disinfecting of potable water systems shall be in accordance with AWWA C651 and AWWA Manual of Practice M55 Chapter 10, and PPI Handbook of Polyethylene Pipe Chapter 2 (2nd Edition).

B. After installation and pressure testing, new water mains should be disinfected according to AWWA C651.

C. The disinfection chemicals should be limited to less than 12% active chlorine. The duration of the disinfection should not exceed 24 hours.

D. Upon completion, the system should be thoroughly flushed with fresh water, and retested to verify the disinfectant chlorine level has been reduced to potable drinking water concentrations in all service water tubing and branch lateral pipes.

Method of Measurement

The work will be measured for payment by the number of linear feet as measured along the centerline of the pipe and accepted in place and measured through all fittings, excluding valves.

Basis of Payment

The work will be paid for at the contract unit price per linear foot for “High Density Polyethylene Pipe” of the size and type specified and as shown on the plans, complete in
place which price shall include all materials, fittings, equipment, labor tools, excavation, backfill, bedding and work incidental thereto.
TECHNICAL SPECIFICATIONS
BEDDING AND BACKFILL

Description

Provided all labor, tools, materials, equipment and incidentals required to perform the work call for in this section including, but not necessarily limited to, the following:

A. Install sand bedding and backfill for water mains.
B. Install backfill material for trench backfill and other areas to produce the required grades.

Materials

A. Sand shall be fine granular material naturally produced by the disintegration of rock and shall be sufficiently free of organic material, mica, loam, clay and other deleterious substances. In case visual inspection of the sand indicates that it is too coarse, the following gradation shall determine its acceptability:

<table>
<thead>
<tr>
<th>SIEVE SIZE</th>
<th>PERCENT PASSING SIEVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8 INCH</td>
<td>100</td>
</tr>
<tr>
<td>#4</td>
<td>95 - 100</td>
</tr>
<tr>
<td>#8</td>
<td>65 - 90</td>
</tr>
<tr>
<td>#16</td>
<td>45 - 75</td>
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<tr>
<td>#30</td>
<td>30 - 50</td>
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<tr>
<td>#50</td>
<td>10 - 22</td>
</tr>
<tr>
<td>#100</td>
<td>2 – 8</td>
</tr>
</tbody>
</table>

B. All imported material used for trench backfill shall conform to Section M.02.01 – Gravel Fill of Form 816.

C. The nature of the materials shall govern both their acceptability for backfill and the methods best suited for their placement and compaction in the backfill. In general, material used for backfilling trenches and excavations around structures shall be suitable material that was removed in the course of making the construction excavations complying with Section M.02.01 – Gravel Fill, of Form 816. The source and quantity of all materials brought in form off-site must be approved by the Town, prior to delivery.

No stone or rock fragment greater than 12 inches in greatest dimension shall be placed in the backfill, not shall large masses of backfill material be dropped in the trench in such manner as to endanger pipe. Pieces of bituminous pavement shall be excluded from the backfill.

Construction Methods
As soon as practicable after the pipes have been laid or the structures have been built and are structurally adequate to support loads, including construction loads to which they will be subjected, the backfilling shall be started and thereafter it shall proceed until completion.

1. Zone Around Pipe: The space between the water pipe and the bottom side of the trench shall be packed full by hand shovel with sand. In placing the material, care shall be taken that stones do not strike the pipe. The backfill under the pipe shall be thoroughly compacted using curved tamping bars. Sand backfill at the sides and up to the top of the pipe shall be compacted using approved hand tampers. Sand backfill up to a level of 1 foot above the top of the pipe shall be placed in 6-inch lifts, leveled along the length and width of the trench and thoroughly compacted using approved tampers. No sand shall be placed above the top of the pipe until sand under and at the sides of the pipes has been compacted. Care shall be taken in the use of mechanical or other tampers not to injure or move the pipe, or cause the pipe to be supported unevenly.

2. Remainder of Trench: The remainder of the trench above the zone around the pipe may be placed in one layer, provided it is compacted by means of a hoe-pack to achieve a 95% modified proctor density. If a hoe pack is not used, the backfill shall be spread in layers not to exceed twelve (12) inches in depth prior to compaction. Each layer shall be carefully and thoroughly tamped with approved tools in such manner as to prevent settlement after the backfill has been completed and to achieve a 95% modified proctor density. Compaction testing may be required by the Town, at the sole discretion of the Town.

**Method of Measurement**

This item shall not be measured individually, but instead shall be measured as part of the contract unit price for the underground utility supplied.

**Basis of Payment**

This item shall not be paid for individually, but instead shall be paid as part of the contract unit price for the underground utility supplied.
TECHNICAL SPECIFICATIONS
FIRE HYDRANT ASSEMBLIES

Description

1.1 SCOPE OF WORK:
A. Provide all plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to complete the work of this Section.

B. To complete the work of this Section, the contractor shall:

1. Perform selective clearing and thinning of trees and brush, construction staking, trench excavation, dewatering, bracing utility poles, pipe bedding, ductile iron pipe and specials.

2. Furnish and install new fire hydrants and appurtenant piping, gate valves, restrained joints, hydrant tees, thrust blocks, drainage aggregate, magnetic indicating tape, and all other related fittings and work.

3. Provide combined pressure and leakage tests on the new fire hydrant assemblies and disinfect the new fire hydrant assemblies. Pressure and leakage testing, and disinfection required for the installation of fire hydrant assemblies shall be as specified under Water Distribution System, but include for payment under this section.

2.0 RELATED DOCUMENTS

A. The publications listed below form a part of this specification to the extent referenced. These publications are referred to in the text by the basic designation only.

<table>
<thead>
<tr>
<th>Basic Designation</th>
<th>Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>ConnDOT Form 816</td>
<td>State of Connecticut, Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, 2004, including all text revisions and addenda.</td>
</tr>
<tr>
<td>ANSI/AWWA</td>
<td>ANSI/AWWA Standards, latest edition, including all revisions</td>
</tr>
</tbody>
</table>
3.0 SUBMITTALS

A. Shop Drawings:
   1. Prepare and submit shop drawings for the following items:
      a. Hydrant assemblies and appurtenances

B. Product Data:
   1. Provide manufacturer’s standard drawings and/or catalog cuts for
      new piping, gate valves, mechanically-restrained joints, tees, and
      other related fittings.

C. Contractor Permits
   1. Submit copies of the following Contractor-acquired permits to the
      Engineer:
      a. All permits required by Federal, State, and Local authorities.

4.0 SEQUENCING

A. Coordinate final station, offset, and orientation for each hydrant with the
   owner and/or local fire department.
Materials

1.0 FIRE HYDRANTS
   A. Supplied by Town.

2.0 DRAINAGE AGGREGATE
   A. 1/4" – 3/4" screened gravel.

Construction Methods

3.1 FIRE HYDRANT ASSEMBLIES
   A. Comply with AWWA Standard C600 and AWWA Manual M17.
   
   B. The contractor shall install fire hydrants as specified by the manufacturer to insure proper functioning of breakaway traffic feature. Any extensions or fittings necessary to achieve proper burial shall be at no additional cost to the Owner.
   
   C. Install stone drainage pockets, concrete collars, supports, and thrust restraints as shown in the Contract Drawings.

Method of Measurement

A. New Fire Hydrant Assemblies shall be measured as the actual Fire Hydrant Assemblies installed in accordance with these Contract Drawings and Specifications.

Basis of Payment

A. The Fire Hydrant Assemblies shall be paid for at the Contract Unit Price.
MAINTENANCE AND PROTECTION OF TRAFFIC
SPECIFICATIONS

Description:

The item for “Maintenance and Protection of Traffic” shall include all labor, equipment and materials required in accordance with the Form 816, except that this item shall also include the cost of signs, barricades, drums, lights, delineators, traffic cones and furnishing and placing of materials such as borrow, gravel, crushed stone, bituminous concrete for patching and pipe. Contractor is solely responsible for work zone safety and shall provide, at a minimum, the work zone signage attached. Normal operations in the park will continue during construction. Roadway shall be kept open to at least one-way traffic within the project area at all times when Contractor is not actively working in area. Access to all park areas shall be maintained except for very brief interruptions. It is the sole responsibility of the contractor to make arrangements for vehicles to reach all playing fields during working hours either through or around work site(s). Work zone cone, barricade and signage patterns shall be based upon the posted speed limit of 15 miles per hour and the attached plates.
Following completion of construction, all construction signs, cones, drums, etc… shall be removed for the site and all areas damaged by sign placement or construction activities shall be restored or repaired to pre-construction condition.

Method of Measurement

This work will not be measured for payment.

Basis of Payment

This work will be paid for at the contract lump sum price for “Maintenance and Protection of Traffic” in accordance with Article 9.71 of the Form 816, except that this item will also include all costs for signs, barricades, drums, traffic cones, lights, delineators and the cost of furnishing and placing of materials such as borrow, gravel, crushed stone, bituminous concrete for patching, pipes and temporary repairs or to maintain safe and efficient vehicular and pedestrian traffic.
TOPSOIL AND TURF ESTABLISHMENT
SPECIFICATIONS

Description:

The item for “Topsoil and Turf Establishment” shall include all labor, equipment and material necessary to strip, screen and stockpile existing topsoil, respread stockpiled topsoil to line, depth and grade at the locations as shown on the plans or as directed by the Engineer, rake out all stones 1” and greater in size as well as roots and other objectionable material, seed and mulch in accordance with Articles 9.44 and 9.50 of the Form 816, as amended, at the unit price per square yard.

Materials

Topsoil, fertilizer, seed, and mulch shall conform to the requirements of Section M.13 of the Form 816, as amended.

Construction Methods

1. Topsoil and Turf Establishment - in accordance with Articles 9.44 and 9.50 of the Form 816, as amended,
2. Town will furnish baseline and benchmark for installation of improvements. Contractor to provide all other field survey required. Owner to perform as-built survey upon completion of fieldwork.
3. Existing material shall be removed, screened, stockpiled and reused as required. Spread to a minimum depth as shown on detail. Excess material to be disposed of on-site as directed by Town.

Method of Measurement

This work will be measured for payment by the following:

Number of square yards of Topsoil and Turf Establishment as shown on the plans or as directed by the Engineer. The pay limit for topsoil and turf establishment shall be six feet wide centered on center line of pipe.

Basis of Payment

This work will be paid for as follows:

Contract unit price per each square yard of “Topsoil and Turf Establishment”, complete and accepted in place, which price shall include all equipment, mowing, watering, maintenance, material, labor and work incidental to as specified herein. Partial payment of up to 60% may be made for work completed, but not accepted, at the option of the Town.
TECHNICAL SPECIFICATIONS
SEDIMENTATION CONTROL SYSTEM

Description:

The item for “Sedimentation Control Systems” shall include all labor, equipment and materials required to furnish, place, maintain and remove sedimentation control systems, as shown on the plans or as directed by the Town, in place according to Form 816, as amended. There shall be no separate payment for the cleaning out accumulated sediment or replacing failed system.

Materials

Materials shall conform to the requirements of Section 2.19 of the Form 816, as amended.

Construction Methods

System shall be placed and maintained in accordance with the requirements of Section 2.19 of the Form 816, as amended.

Method of Measurement

This work will be measured for payment by the following:

Number of linear feet of sedimentation control systems as measured along the centerline of the system installed and accepted. Replacement systems shall not be measured for payment.

Basis of Payment

This work will be paid for as follows:

Contract unit price per linear foot of sedimentation control systems installed and accepted complete in place, which price shall include all equipment, material, labor, tools and work incidental to the placement, maintenance, replacement, removal and disposal of the system and surplus material. No payment shall be made for cleaning out accumulated sediment or replacement materials.
TECHNICAL SPECIFICATIONS
PRINTED UNDERGROUND WARNING TAPE

Description

The item for “Printed Underground Warning Tape” shall include all labor, equipment and materials necessary to properly lay the printed underground warning tape in the trench above the supplied utility in accordance with the dimensions, details and specifications shown on the plans or as directed by the Town.

Construction Methods

Materials and placement utilized for the printed underground warning tapes shall meet the latest APWA and AASHTO specifications. The materials shall be 6” wide, durable, flexible, 4 mil polyethylene film that is highly resistant to acids, alkalis and other soil components. Film used shall be color coordinated for the proper utility it lies, above. There shall be 2 lines of print on the warning tape. The top line shall read “CAUTION” and the bottom line shall state the type of utility below. All lettering shall be black on properly colored backgrounds which are as follows;

BURIED SEWER LINES – Green
BURIED DRAIN LINES – Purple
BURIED POTABLE WATER LINES – Blue
BURIED ELECTRICAL LINES – Red

The minimum distance between the buried utility and the warning tape shall be 12 inches unless the depth, other underground utilities, or other engineering considerations make the minimum separation unfeasible. Warning tape shall be placed above all utilities supplied.

Method of Measurement

This item shall not be measured individually, but instead shall be measured as part of the contract unit price for the underground utility supplied.

Basis of Payment

This item shall not be paid for individually, but instead shall be paid as part of the contract unit price for the underground utility supplied.
PROPOSAL

The following items shall be provided in accordance with the State of Connecticut Department of Transportation “Standard Specifications for Roads, Bridges and Incidental Construction”, Form 816, as amended.

<table>
<thead>
<tr>
<th>Description/Unit Price</th>
<th>Estimated Computed Quantities</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item # 1 – Install Fire Hydrant</strong></td>
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<td>The unit price of</td>
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<tr>
<td><strong>Item # 2 – 8” D.I.P</strong></td>
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<td><strong>Item # 3 – 8” HDPE</strong></td>
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<td><strong>Item # 4 – Thrust Blocks</strong></td>
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<td>$_______</td>
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<tr>
<td><strong>Item # 5 – 8” Gate Valves</strong></td>
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<td>(  ) per each (EA)</td>
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<td><strong>Item # 6 – 6” Gate Valve and Hydrant Tee</strong></td>
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<td>(  ) per each (EA).</td>
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<td></td>
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</tbody>
</table>
Item # 7 – Topsoil & Turf Establishment
The unit price of
______________________________ Dollars
and __________________________ Cents
($ ___________ ) per square yard (SY)

560 SY $___________

Item # 8 - Maintenance and Protection of Traffic
The lump sum price of
______________________________ Dollars
and __________________________ Cents
($ ___________ ) per lump sum (LS)

1 LS $___________

Item # 9 – Sedimentation Erosion Control – Silt Fence
The unit price of
______________________________ Dollars
and __________________________ Cents
($ ___________ ) per linear foot (LF)

845 LF $___________

Computed
Total- Project $___________
Payment Terms

Time to Completion ___________________________ Working Days

Warranty ___________________________

Have you taken any exceptions or have you deviated from our printed specification and if so, are such suggested changes clearly noted on the page provided for exceptions to specifications?

___ yes

___ no
EXCEPTIONS TAKEN TO SPECIFICATIONS:
### RECEIPT OF ADDENDA

<table>
<thead>
<tr>
<th>ADDENDUM #</th>
<th>SIGNATURE</th>
<th>DATE</th>
</tr>
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<tbody>
<tr>
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NAME OF BIDDER: ____________________________________________

OFFICIAL ADDRESS: __________________________________________

PHONE NUMBER: _____________________________________________

BY: _______________________________ TITLE:_____________________
    (Please Print)

DATE:__________________________________________________________________________

SIGNATURE:_____________________________________________________________________


PROPOSED SUBCONTRACTORS

FIRM __________________________  Name __________________________

____________________  Street __________________________

____________________  City  State  Zip Code __________________________

CONTACT __________________________  TELEPHONE __________________________

Please Print

TYPE OF WORK TO BE PERFORMED __________________________


FIRM __________________________  Name __________________________

____________________  Street __________________________

____________________  City  State  Zip Code __________________________

CONTACT __________________________  TELEPHONE __________________________

Please Print

TYPE OF WORK TO BE PERFORMED __________________________


FIRM __________________________  Name __________________________

____________________  Street __________________________

____________________  City  State  Zip Code __________________________

CONTACT __________________________  TELEPHONE __________________________

Please Print

TYPE OF WORK TO BE PERFORMED __________________________
REFERENCES

The Bidder is required to fill out the following form to enable the Owner to make inquiries and judgment as to the Bidder's experience, skill, available financial resources, credit and business standing.

1. Number of years the Bidder has been in business as a Contractor: ________________.

2. List three (3) projects of similar in nature to the project described herein that the Bidder has completed along with the approximate construction cost. Include the name, address and telephone number of a reference for each project.

________________________________________________________________________

________________________________________________________________________

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3. List projects presently under construction by the Bidder, dollar volume of the Contract and percent completed.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
4. Has the Bidder ever failed to complete work awarded to him; and if so, state where and why.


5. Does the Bidder plan to sublet any part of this work; and if so, give details.


6. List equipment the Bidder owns that is available for this project.


7. List equipment the Bidder plans to rent or purchase for this project.


